

# **Patient Safety Curriculum**

## ***Introduction and Overview***

INTRODUCTION AND OVERVIEW  
TABLE OF CONTENTS

Introduction to the Patient Safety Curriculum ..... 1

Overview of Issues in Patient Safety ..... 3

*The IOM Call to Action* ..... 3

*The First Step: Systems Thinking*..... 4

*The Patients’ Perspective* ..... 5

*Physicians’ Perspective*..... 6

*Efforts to Improve Patient Safety*..... 6

Patient Safety Organizations and Initiatives ..... 7

*Nationwide Organizations and Initiatives*..... 7

Initiatives to Improve Patient Safety in Washington State ..... 10

APPENDIX

Glossary..... 13

Opposing View on the Magnitude of Preventable Mortality ..... 15

REFERENCES ..... 16

## Introduction to the Patient Safety Curriculum

The Washington State Medical Association has developed this curriculum to educate practicing physicians and residents regarding opportunities and strategies for the improvement of patient safety. This three hour curriculum is targeted primarily to physicians with ambulatory care practices and hospital privileges. The curriculum contains numerous references to safety and quality-of-care studies conducted in hospital settings, but only a few studies from office-based practice and other ambulatory care settings (where much investigation remains to be done). Nonetheless, basic principles of safety improvement are applicable in any practice setting, whether hospital- or office-based.

The goals of this curriculum are to

1. Educate practicing physicians and residents regarding opportunities and global strategies for the improvement of patient safety, and
2. Give physicians practical guidance for application of systems thinking in their own efforts for improving patient safety.

To accomplish these goals, this curriculum will provide

1. Global scenarios to illustrate the scope and magnitude of medical errors;
2. Information on the epidemiology of medical errors in hospital-based, office-based, and ambulatory care settings;
3. A “systems thinking” framework for viewing practice structure and operations as they relate to patient safety;
4. Evidence for successful approaches to safety and quality improvement;
5. Case study exercises on the analysis of medical errors; and
6. Opportunities for participants to apply systems thinking in characterizing their own practice settings and identifying factors that help or hinder patient safety.

The curriculum consists of a PowerPoint presentation with lecture notes organized into three modules of instruction, as listed below. The notes bring out key points to cover during your presentation and group discussions, and they include references to sources cited on the slides.

A Leaders Guide for each of the three modules includes the following information:

- Learning objectives
- Content outline
- Guidelines for each module’s implementation
- Lecture notes, as included on the “Notes” pages of the PowerPoint slides provided on a CD-ROM.
- Suggested questions to foster group interaction, prompts to use flipcharts, etc.
- An attitude survey and a presentation evaluation form

## Introduction to the Patient Safety Curriculum (continued)

### *About the Modules*

The curriculum is organized into three modules, as follows. Each module is designed to support approximately one hour of instruction and group discussion.

**Module I – Medical Error Scenarios and Perspectives on Patient Safety:** This module is designed to support a lecture presentation and discussion. It sets the stage for the entire curriculum by presenting three global scenarios in which medical errors occur. It is recommended that participants be given an opportunity to discuss how the scenarios may relate to situations they see in their own practices. It also supports a lecture presentation on strategies for improving patient safety, including sections on the role of error reporting, success stories in safety improvement, and systems thinking.

**Module II – Medication Safety, Systems & Communication:** This module focuses on strategies for error reduction in three aspects of clinical practice: prescribing safety, tracking systems and follow-up, and transcultural communications. The instructional guidelines include prompts for group discussion of ways to enhance factors that help to assure patient safety, and to overcome hindrances to patient safety.

**Module III – Case Studies and Root Cause Analysis of Adverse Events:** This module is designed to support a group discussion in which participants can perform root cause analysis on the cases presented and relate common themes in the curriculum, such as communication and systems thinking, to their own practices.

### *Presenting the Modules*

Selecting an Instructor: This introduction, and the individual modules, contain all of the materials and background references the instructor will need to prepare a lecture or other educational session for professional audiences. Although a background in health care system safety is of great benefit, the curriculum emphasizes practical issues and applications to clinical practice.

Preparing to Present: Instructors should begin their preparations by reading the *Overview of Issues in Patient Safety*, which begins on the next page. They may want to review the references cited in the introduction for additional background. Instructors should then review the module(s) they are presenting, familiarizing themselves with the content, making presentation notes, and reviewing the references. Finally, instructors should make sure that the following resources are available and in working order for the presentation:

- The CD-ROM containing the PowerPoint slide presentations of Modules I, II, and III.
- Hardware necessary for displaying the slides
- A flipchart and markers for noting comments during your question and answer sessions
- Handouts for each participant:
  - an attitude survey (regarding error reporting, patient safety initiatives, etc.)
  - a presentation evaluation form

## Overview of Issues in Patient Safety

### *The IOM Call to Action*

The Institute of Medicine (IOM) brought patient safety into the spotlight in its 1999 report *To Err is Human*. The report made headlines with its estimate that medical errors account for between 44,000 and 98,000 deaths in the United States per year. Though the accuracy of these numbers has been debated, with some saying that they are underestimated and others that they are overestimated, the message they communicate remains: medical errors happen, and sometimes people are harmed by them. As noted by William Richardson, Ph.D., chair of the Committee on Quality of Health Care in America, in his the preface to the IOM report, “At some point in our lives, each of us will probably be a patient in the health care system. It is hoped that this report can serve as a call to action that will illuminate a problem to which we are all vulnerable.”<sup>1</sup>

The largest group of medical errors — and the most expensive — consists of medication errors. In one widely cited study by Johnson and Bootman, the investigators created and applied a cost-of-illness model to estimate that drug-related problems cost \$76.6 billion in 1995.<sup>2</sup> It is important to note, however, that the study did not attempt to discern what proportion of these “drug-related problems” represent errors rather than such things as unavoidable adverse effects. Indeed, patient noncompliance is one important source of drug-related problems, but whether or not it represents a medical error depends upon the root causes of non-adherence and, to some extent, upon one’s point of view. Among elderly or poorly educated people, for example, medication instructions that are difficult to read or to understand may precipitate nonadherence, and, as such, one may assert that an error in packaging or communication is the proximal cause. On the other hand, nonadherence sometimes occurs when patients taking prescriptions for acute therapy begin to feel better and decide the medication is no longer necessary, even though their doctor told them to take all of the medication prescribed. In this case, the patient’s deliberate nonadherence is the proximal cause of the medication error. One way to avert problems such as these is to assure patients are adequately informed and educated, and to remind capable patients and caregivers that they are in control of their own care when they go home.

Given the magnitude of the medical error problem and its cost to society, the IOM report calls for a national reduction of medical errors by 50 percent over five years. It includes recommendations for error reduction initiatives, and explores the possibilities and precedents for a comprehensive approach to the improvement of patient safety. This curriculum is one of The Washington State Medical Association’s responses to that call to action.

While most of the patient safety initiatives to date have focused on medical errors in hospital settings, this field of study is rapidly expanding to address patient safety in ambulatory practice, as well.<sup>3</sup> For example, a national agenda for patient safety research in non-hospital settings has been published by the Agency for Healthcare Research and Quality (AHRQ).<sup>3</sup> Ambulatory care visits account for nearly 3 billion prescriptions per year, countless patient-practitioner interactions, and a huge number of orders for everything from lab and radiology tests to referrals for specialist care or hospitalization. As such, ambulatory care settings represent fertile ground for medical errors, and an area in which research and dissemination of the knowledge acquired therefrom can play a vital role in improving patient safety.

One particular message is continually reinforced in the IOM report and other communications on patient safety: Medical errors are not just caused by human failures, but by failure of our health care system to keep pace with developments that have changed the practice of medicine so dramatically in recent decades.

### ***The First Step: Systems Thinking***

Fixing our health care system is a daunting task, but a stepwise repair process can keep the task manageable and help assure its success. The first step toward that end is to understand the need for systems thinking. Clinical practices are most accurately described as complex adaptive systems. That is, their operation involves many different elements, each of which is subject to direct or indirect influence from a variety of sources, and all of which interact in ways that are constantly subject to change.

**“Errors occur because of system failures...the American health care system needs a fundamental change...Trying harder will not work. Changing the system in which we practice will.”**

Kenneth Shine, MD  
President, Institute of Medicine  
*Patient Safety Leadership Forum, March 2001*  
Keynote Address

Systems thinking is essential if we are to see errors for what they are — breakdowns in incredibly complex undertakings — and abandon the “culture of blame” mentality that pervades our litigious society. This culture makes many health care professionals afraid to participate in safety improvement initiatives, especially with regard to error reporting and analysis. While this curriculum is *not* a formal call to action for error reporting, it does address the role of error reporting and analysis as an indispensable part of safety improvement. Furthermore, it cites examples of successful, *nonpunitive* reporting processes used in other complex systems, notably commercial aviation. The take-home message from these examples is that ongoing surveillance of a system’s structure and activity translates into safe, high-quality service that people can count on. That surveillance includes not only reporting of major incidents (that is, sentinel events) but also of “near misses,” those incidents in which an error occurred but did not result in an adverse event — usually because the error was detected and corrected downstream.

The human element of health care systems is one factor over which individual practitioners do have control during interactions with patients, and it is to the practitioners’ credit that near misses are caught before they become accidents that cause harm. This underscores the importance of individual expertise and judgment for what should happen during patient care interactions. Systems accomplish exactly what they are designed to accomplish, but they are always imperfect. For example, one can do the right thing — but at the wrong time — and get the wrong outcome. Similarly, what may work for 98 percent of practitioners in a given system won’t work for the other 2 percent, and this translates into an unacceptable incidence of errors.

Another human factor in health care system safety is the impact of fatigue and stress on job performance. In one cross-sectional survey of hospital-based practitioners,<sup>4</sup> 60 percent of the respondents agreed with the statement that they performed effectively at critical times even when they were fatigued. By contrast, only 26 percent of airline cockpit crew members agreed with the same statement included as part of a questionnaire widely used in the aviation industry. Limitations of the survey include the small sample size (n = 1033, from 12 hospitals), reliance on self-reporting, and non-response biases. In addition, the survey does not account for hospital-to-

hospital variations in the systems within which the respondents were working. Still, insofar as medical care and aviation both represent complex, inherently hazardous activities, and since the practice of medicine and piloting a commercial airliner are both performed by well-qualified and highly trained people, it is surprising to see such a disparity in the responses. Doctors are people, too. We all need R&R if we are to perform optimally.

It is important to note that several characteristics of office-based practice give physicians a level of complexity that differs from that of hospital settings, and this sets the stage for different types of system failure. One is that provider networks in ambulatory care settings are decentralized; indeed, an office-based practice is an example of a microsystem within a macrosystem of offices, labs, pharmacies, care facilities, health plans, and so on. Yet another source of system complexity for office-based practitioners — and a major reason for system failure — is that most of their patients and families must manage their own care when they go home.

### ***The Patients' Perspective***

One way to appreciate the need for safety improvement is to consider what patients want and expect when they go to the doctor, whatever the setting. What do patients want from their doctors? According to extensive research and patient surveys conducted by the Picker Institute, they want respect, information, access, emotional support, physical comfort, involvement of family and friends, coordination of care, and continuity of care.<sup>5</sup>

Of course, patients also want safety; but they do not perceive it as a key dimension of quality.\* Why not? Because many people assume that health care is safe, just as they assume that every airplane they board will take off, fly, and land safely. This erroneous assumption has far-reaching implications for physicians. It leads some patients to have unrealistic expectations of the health care system in general, and of physicians in particular. Unrealistic expectations can also set physicians up to feel ashamed if an error occurs in practice and has adverse effects on the patient's well-being. Just as our "culture of blame" fuels litigation, and needs to be remedied, a "culture of shame" based on unrealistic expectations fuels the tendency of practitioners to disregard or hide errors. The fact is that we all are human, and we all err at times. Unless this reality of the human condition is accepted and proclaimed, efforts to improve patient safety can go nowhere — not through legislation, regulation, or litigation. What *can* improve patient safety? Some of the answers can be learned from the patients' perspective embodied in the Picker Dimensions of Quality. Constant attention to factors such as respect for the patient's values, effective communications, coordination of health care teams, and continuity of care not only define quality of care, but can also do much to improve patient safety.

---

\* The second IOM report (*Crossing the Quality Chasm*) positions safety as the *first* of their six dimensions of quality health care. The report defines quality health care as being 1. safe, 2. effective, 3. patient-centered, 4. timely, 5. efficient, and 6. equitable.

### ***Physicians' Perspective***

The delivery of safe, high-quality medical care relies on the application of proven resources and techniques by people with the credentials to use them for their intended purpose. When qualified people do the right things at the right time, the desired outcomes of medical care are most likely to be achieved. But are the desired outcomes of care achieved every time a patient goes to the doctor's office, the local pharmacy, the ambulatory surgicenter, the hospital, or back home to manage their own care? Unfortunately not. This is not due to human failure, but due to failures lying dormant in the health care system and revealed as errors mainly because people can't catch them all.

### ***Efforts to Improve Patient Safety***

The release of the first IOM report followed the launch of numerous large-scale initiatives to address patient safety issues and take steps to improve the quality of health care in America. Some of these are nationwide in scope and have undertaken ambitious campaigns to improve patient safety. The list of patient safety projects and participants is large and growing (see pages 8 through 12), and it is reasonable to expect that they will foster major changes in the design of health care systems and the practice of medicine.<sup>6,7</sup>

The call to action for improvements in patient safety and quality of care is taking place at a time when physicians and other practitioners are being pressured into doing more with less. Physicians are expected to increase patient throughput, make ends meet with fewer qualified nurses and other staff, and pay higher malpractice premiums ... all in the face of declining reimbursements, increasing operating costs, and preclusion from collective bargaining to secure favorable contracts with health plans and payers. These are but a few of the conditions that hinder the changes necessary to improve patient safety. Other hindrances are rooted in the complex regulatory and legal framework in which health care professionals must operate. Still others are rooted in fundamental human behavior: People resist change, especially when it means they have to do some things differently.

This curriculum is an educational program, *not* a formal call to action for error reporting and analysis. It is important, however, for participants to understand the rationale for error reporting and analysis, and to see that these activities are integral to the improvement of patient safety and the assurance of high-quality health care. Error reports describe what happened, whereas analysis can reveal why it happened. Error analysis permits the identification of latent system failures and prompts actions to optimize the performance of individual system elements and/or the interactions between different elements. Together, error reporting and analysis can identify problems and help to avert their repetition; but it is up to individual practitioners to decide what actions they should take in their everyday work, and then to take those actions, to help assure patient safety.

Improvement of patient safety is clearly a big undertaking, and it's easy to say, "Nothing I can do will solve this problem." But, when viewed in the context of individual patients seen in day-to-day practice, the problems come into focus, and the solutions can become more evident. By charting a plan of action and then taking the appropriate steps to execute that plan, patient safety and quality of care *can* be improved.

## Patient Safety Organizations and Initiatives

The following descriptions of key organizations and initiatives for patient safety improvement is provided as background to illustrate what's happening in this critical and dynamic field of endeavor. Some of the organizations and initiatives described here are nationwide in scope, and others are focused specifically on safety improvement in Massachusetts. Many of these organizations are headed and staffed by physicians and other health care professionals, giving them a unique perspective on ways to improve patient safety. All of these descriptions are accompanied by the URL (website address) for that organization's home page, provided for your reference.

### *Nationwide Organizations and Initiatives*

#### **Agency for Healthcare Research and Quality (AHRQ)** <http://www.ahrq.gov>

The AHRQ, a division of the Department of Health and Human Services (HHS), is the lead federal agency on quality of care research. Its mission is to support, conduct, and disseminate research that improves access to care and the outcomes, quality, cost, and utilization of health care services. The AHRQ has been fulfilling this mission since 1989 through its leadership role in the federal Quality Interagency Coordination (QuIC) Task Force. This task force is spearheading the initiation of a number of federally funded research projects on patient safety. The AHRQ spends approximately 80 percent of its budget (\$270 million in FY2001) funding research grants. It allocated \$50 million for patient safety research grants in FY2001.

#### **Anesthesia Patient Safety Foundation (APSF)**

<http://www.gasnet.org/societies/apsf/index.html>

The APSF was established in 1984 “to assure that no patient shall be harmed by the effects of anesthesia” as set forth in its mission statement. The APSF is noteworthy because it has been instrumental in dramatically improving anesthesia safety since the time of its inception. As such, it represents a good source of insight and precedence for activities — such as clinical investigations and communications programs — that can be undertaken to improve patient safety.

#### **National Patient Safety Foundation (NPSF)** <http://www.npsf.org>

The NPSF was established in 1997 with the mission of helping health care systems achieve measurable improvements in patient safety. It seeks to identify, create, and facilitate the application of a core body of knowledge about patient safety, to foster a culture of receptivity to patient safety initiatives, and to raise public awareness about patient safety. Among the activities sponsored by the NPSF are national and regional educational conferences and the dissemination of publications. Their online bibliography (<http://www.npsf.org/html/bibliography.html>) contains a wealth of citations in the patient safety literature dating back to 1939, from peer-reviewed publications to authoritative textbooks.

#### **Institute for Healthcare Improvement (IHI)** <http://www.ihl.org>

The IHI is a Boston-based, independent, not-for-profit organization founded in 1991 to foster systematic improvements in health care in the United States, Canada, and Europe. The IHI is a leading force in promoting and facilitating teamwork and collaboration in a variety of health care

reform initiatives. Their mantra is that people and organizations who share a common goal (e.g., patient safety improvement) can achieve more by working together than by working separately. The activities of the IHI embody a systems thinking approach toward the goal of creating health care systems that are accessible, safe, easy to use, and satisfying for patients, practitioners, and communities. In 1999, the IHI launched a nationwide initiative called Idealized Design of Clinical Office Practices (ID-COP). In 2001, the IHI announced the launch of its medication safety initiative, called Idealized Design of the Medication System (IDMS).

**Institute for Safe Medication Practices (ISMP) <http://www.ismp.org>**

The ISMP is a nonprofit organization that works with the major stakeholders in health care to provide information and education about adverse drug events and their prevention. The ISMP works closely with the U.S. Pharmacopoeia (USP) to analyze data gathered through the Medication Errors Reporting Program (MERP), which was launched by the USP in 1991. (The USP shares MERP data with the U.S. FDA, which operates its own adverse drug event reporting system, called MEDWatch.) In 2000, the ISMP published *Medication Errors*<sup>8</sup> a comprehensive treatise on the causes of medication errors and, more important, ways to prevent them.

**Leapfrog Group <http://www.leapfroggroup.org>**

Established in 1999, the Leapfrog Group is a coalition of large, self-insured employers seeking to leverage their purchasing power to drive improvements in health care quality. Their strategy is to monitor the quality of health care services in communities where their employees work and live, focusing initially on hospitals, and channeling their employees to those facilities that achieve objective measures of high-quality care. The group currently is focusing on three initiatives for quality improvement in hospital-based care: (1) evidence-based hospital referral, (2) Intensive Care Unit (ICU) physician staffing and responsiveness, and (3) Computerized Physician Order Entry (CPOE). The CPOE initiative is of particular interest in this curriculum because research to date indicates that general use of CPOE can significantly reduce medical errors and their attendant costs.<sup>9, 10, 11</sup> The Leapfrog Group is working with First Consulting Group (FCG) and the Institute for Safe Medication Practices (ISMP) to develop testing criteria and the first-ever methodology for evaluating the effectiveness of individual hospitals' CPOE system implementations. The goal of the project is to assist The Leapfrog Group in its nationwide effort to improve patient safety.

**VA National Center for Patient Safety (NCPS) <http://www.va.gov/ncps>**

The NCPS was established in 1999 to participate in activities and programs concerned with the improvement of patient safety; it operates under the auspices of the Department of Veterans Affairs (VA). In May 2000, the NCPS forged an alliance with the National Aeronautics and Space Administration (NASA) to implement and operate a system for recording and analyzing medical errors and "near misses." NASA's Ames Research Center will operate the VA Patient Safety Reporting System, which is modeled after the NASA-administered Aviation Safety Reporting System (ASRS). VA operates 172 medical centers that treated more than 3.3 million patients in 1999. It has been a leader in reporting medical errors and has achieved substantial reductions in medication errors through the implementation of electronic prescribing practices in all of its centers.

Institute for Healthcare Improvement <http://www.ihf.org>

National Patient Safety Foundation <http://www.npsf.org>

Washington State Medical Association <http://www.wsma.org>

Washington Patient Safety Coalition <http://www.wapatientssafety.org>

Washington State Department of Health <http://www.doh.wa.gov>

Qualis Health <http://www.qualishealth.org>

## Initiatives to Improve Patient Safety in Washington State

Physicians, hospitals, researchers and others in Washington State are active leaders in promoting and carrying out an impressive range of patient safety efforts. To date these efforts are the initiative of individual institutions and organizations and lack any overall coordination or synthesis.

### *Initiatives of the Washington State Medical Association*

With some 9,000 members, the Washington State Medical Association (WSMA) is using its position as the state's largest professional medical society representing all physicians to encourage physicians and health systems statewide to look carefully at practices that enhance the safe care of patients. Through its Patient Safety/Error Reduction Initiative, it is involved in a number of safety activities.

- This patient safety curriculum for physicians.
- Patient safety tips for patients and their families, which is posted on the WSMA web site – <http://www.wsma.org>.
- Has published and promotes the elimination of the use of dangerous abbreviations in all health care settings.
- Promotes the use of uniform protocols and procedures to prevent wrong site or wrong person surgery.
- Developed and promotes guidelines for office-based anesthesia and surgery.
  
- The association publishes articles in its lead publication, the monthly *WSMA Reports*, featuring patient safety and quality of care initiatives. Articles have highlighted what Washington health care institutions are doing to implement the “do not use” abbreviations, among the JCAHO national Patient Safety Goals. Other articles have featured what physicians and hospitals are doing to carry out the recommendations of *Crossing the Quality Chasm*, the successor document to the Institute of Medicine’s *To Err is Human*.
  
- The WSMA publication has also covered JCAHO sentinel events; the case reporting service by the Agency for Healthcare Research and Quality (AHRQ) where physicians and others can read about and learn from “near misses” and more serious errors; the Leapfrog Group; and how to communicate errors and “bad news” to patients. *WSMA Reports* has been publishing a column in each issue for the last 25 years by William O. Robertson, MD, on malpractice cases and what can be done to prevent them.
  
- The WSMA is working with the Washington State Patient Safety Coalition and Washington State Hospital Association on patient safety efforts. The WSMA is a founding member of the safety coalition, and senior staff serves on the coalition steering committee. The mission of the coalition, launched in 2002, is to reduce medical errors and improve patient safety in Washington. Its goal is to become a key resource for patient safety activities in Washington. Steering committee members besides the WSMA are the

Department of Health, the hospital association, the nurses association, Group Health Cooperative, Swedish Medical Center and the Washington Health Foundation. In 2003, the steering committee developed a professional conference on wrong-site surgery and also published guidelines, in print and on the WSMA Web site, to prevent wrong-site surgery; this year it is focusing on medication safety. The steering committee also endorsed a surgical site infection project initiated by QualisHealth; 11 Washington state hospitals and four Idaho hospitals participated and have demonstrated measurable improvement in using antibiotics appropriately.

- The WSMA works with Physicians Insurance (PI) to develop error reduction strategies for the outpatient setting.

As directed by its House of Delegates, the WSMA has been involved for several years on quality, patient safety and physician accountability issues, treating them as linked topics in the quest to improve care delivered to patients. As a matter of policy, the WSMA supports programs that reduce medical errors (and a reporting environment that promotes the no-fault reporting of “near misses” and errors). It also regularly provides analysis, most recently on office-based surgery, to the Medical Quality Assurance Commission, the state agency that licenses physicians. The WSMA adopted and disseminated to physicians office-based anesthesia guidelines in 2001.

### **Physicians Insurance and Patient Safety**

Physicians Insurance offers brochures, newsletters, practice aids, self-study courses and in-person seminars to physicians to help them practice more safely and avoid malpractice claims.

Physicians Insurance is accredited by the WSMA Medical Education Committee to sponsor continuing medical education for physicians. Most workshops are designated for Category 1 credit, and all of them fulfill the risk management education requirement mandated by the Washington Health Services Act of 1993.

PI’s seminars on risk management and liability cover clinical topics known to be causes of claims. For example, its three-hour workshop *Ruling Out Misdiagnosis: Evaluation and Management of Chest Pain* educated primary care physicians on timely diagnosis of myocardial infarction, aortic dissection and pulmonary embolism. Other examples include *Fetal Monitoring: Evaluation and Risk Reduction*, and *Risk Management for Anesthesia*.

The new courses – *Pulling Together: Managing Handoffs, Conflicts, and Coordination of Care*, and *A Bitter Pill to Swallow: Medication Mistakes, Missteps and Malpractice* debut in October 2004.

Throughout the year, PI staff and physician leaders meet with physicians, staff, and clinic managers at their offices to discuss specific risk management concerns. In 2003, company risk managers visited 175 offices and clinics. In addition, PI responds to approximately 20 telephone calls per day concerning risk management issues.

PI gives each new physician policyholder a package of material including a *Physicians Risk Management Reference Manual*, samples of practice aids and brochures, and an explanation of PI's risk management services. For some specialties, PI also provides a copy of the *Timely Detection of Cancer* manual or *Minimizing Obstetrical Risk* manual. All risk management materials are also available to clinic managers and allied health care professionals who request them. Additionally, most of these materials are available on the PI Web site, at [www.phyins.com](http://www.phyins.com).

Since its founding by WSMA in 1982, PI has sponsored the monthly column in *WSMA Reports* by William O. Robertson, MD, that covers malpractice incidents and offers suggestions for care improvement.

### **Washington Patient Safety Coalition**

The Washington Patient Safety Coalition, of which WSMA is a founding member, is a voluntary organization of diverse stakeholders committed to improving quality and reducing errors. It emphasizes a non-punitive approach and builds upon Washington's history of innovative quality improvement efforts, which have brought together broad groups of participants in a collaborative atmosphere to achieve shared goals.

The coalition held a consensus conference on eliminating wrong-site, wrong-person surgery, and promotes uniform policies and procedures pertaining to wrong-site, wrong person surgery.

The coalition has also held a conference on the use of technology in promoting patient safety.

The coalition is currently promoting medication safety.

---

## APPENDIX

### Glossary<sup>14, 15, 1, 16, 8, 17</sup>

Following is a glossary of terms and descriptions of some common themes in patient safety that form the conceptual framework on which this curriculum is based.

---

**adverse event:** an injury caused by medical management

**preventable adverse event:** an adverse event caused by error

**benchmarking:** an ongoing process that evaluates and quantifies how other organizations have achieved optimal performance and reached desired outcomes

**best practice:** a service, function, or process that produces superior outcomes

**communication:** Effective communication is the starting point for every successful human enterprise, and health care is no exception. People communicate with each other in many ways: face-to-face, over the telephone, in writing, and — most recently — via computer. Each mode of communication requires a somewhat different set of skills, but at least two aspects of communication are universal: delivery of information (e.g., speaking, sending an e-mail message) and receipt of information (e.g., listening, reading an e-mail message). A more subtle aspect of communication — and one that often determines its end result — is the need to follow up on what was communicated. Was it understood? Was it acted upon? If not, then it served no purpose.

**education:** Both of the IOM reports, as well as other authoritative sources, emphasize the vital role of education in patient safety improvement. This includes patient education that helps people play an active role in their own health care, as well as professional education to help physicians and other practitioners take a systematic approach to safety improvement.

**error:** failure of a planned action to be completed as intended, or the use of a wrong plan to achieve an aim

**active error:** an error that occurs at the level of the practitioner and that has almost immediate effects

**latent error:** an error that lies dormant in the system, usually removed from the direct control of the practitioner, that may or may not become an active error

**evidence-based medicine (EBM):** the deliberate and well-informed use of specific, reliable, and measurable evidence in making decisions about the care of individual patients

**forcing function:** a system design element that makes it impossible for user to do the wrong thing (e.g., the use of different connectors on oxygen and nitrous oxide tubes makes it impossible to connect the O<sub>2</sub> tube to the NO tank, and vice versa.)

---

## Glossary (continued)

**hindsight bias:** the tendency to attribute causation to individuals' actions, according to information available after the event, that may not have been evident to the person who took the action initially

**injury:** harm caused by an external force or action

**near miss:** an event or situation that could have resulted in an adverse event, but did not, either by chance or through timely intervention

**quality health care** (IOM definition): Quality health care has six dimensions: it is (1) safe, (2) effective, (3) patient-centered, (4) timely, (5) efficient, and (6) equitable.<sup>16</sup> One take-home message from this curriculum is that improvement of patient safety can go a long way toward improving the overall quality of health care.

**root cause:** a fundamental reason for an adverse event; a condition or process that leads to an accident or injury. Most adverse events have more than one root cause.

**root cause analysis (RCA):** a process for determining how an error occurred; Joint Commission on Accreditation of Healthcare Organizations (JCAHO) mandates that health care organizations perform RCA for sentinel events as a condition for accreditation

**safety:** freedom from accidental injury

**sentinel event:** an unexpected event involving death or serious injury unrelated to the natural course of the individual's illness or underlying condition; a sentinel event is so called because it signals the need for investigation and remediation

**system:** a set of interdependent elements, both human and nonhuman, interacting to achieve a common aim

**sharp end:** a point in a health care system where interactions between patients and health care providers (e.g., physicians, nurses, PAs, pharmacists) take place; practitioners at the sharp end have direct influence on health care outcomes

**blunt end:** the organizations, policies, infrastructure, procedures, and regulations that govern system resources and constraints that determine the practice environment at the sharp end; blunt end factors have indirect influence on health care outcomes

**systems thinking:** a way to study common elements and circumstances in clinical practice that affect the likelihood of error, and to identify strategies and actions that can prevent errors; a way of thinking that enables one to make important distinctions between the potential for system failures, and for medical errors, in different settings

**teamwork:** provides structure for coordinating the expertise of all professionals involved in patient care; teamwork — with effective communication among the team members — is essential for assuring continuity of care from visit to visit and, just as important, when the patient goes back home

## Opposing View on the Magnitude of Preventable Mortality

The actual magnitude of mortality and morbidity due to preventable medical errors is a hotly debated topic. The IOM report focused on two large hospital-based studies as the basis for its estimate on the number of deaths (44,000 to 98,000) due to preventable medical errors. One was the Harvard Medical Practice Study, a review of over 30,000 medical records from acute care hospitals in the state of New York in 1984. This study found that adverse events (injuries caused by medical management) occurred in 3.7 percent of hospitalizations, and that 13.6 percent of these led to death.<sup>18,19</sup> The other was a review of 15,000 acute care discharge records from 1992 in Colorado and Utah.<sup>20</sup> This analysis determined that adverse events occurred in 2.9 percent of hospitalizations, and that 6.6 percent of these led to death. Based on data from the Colorado-Utah study,<sup>21</sup> the IOM estimated that the national costs of adverse events due to medical errors is \$37.6 billion, nearly half of which is due to preventable errors.<sup>1</sup> It is important to note that the conclusions reported by the IOM were based on more than 30 published studies in the peer-reviewed literature, including but not limited to the studies conducted in New York and Colorado-Utah.<sup>22</sup>

The number of deaths due to medical errors reported by the IOM have been challenged for several reasons. One is a challenge to the validity of a retrospective review of medical records in the Harvard Medical Practice and Colorado-Utah studies, which introduces hindsight bias and tends to overestimate the number of deaths due to adverse events.<sup>23,24</sup> Another is the lack of control groups in the studies, and therefore the absence of information about the baseline risk of death among the patients whose records were reviewed. It has been asserted that the screening criteria for the two studies identified subgroups of severely ill patients who were at high risk of death even if adverse events had not occurred.<sup>23</sup>

One study has focused on the variability of reviewers' ratings as a source of overestimation of deaths due to medical errors.<sup>24</sup> In this retrospective analysis of 111 hospital deaths, unadjusted physician implicit reviews rated 22.7 percent of deaths as being preventable by optimal care. However, when adjusted for the patients' underlying, short-term prognosis, only 0.5 percent of the deaths were rated as being preventable by optimal care.<sup>24</sup>

While some maintain that the IOM report overestimates number of deaths due to medical errors, others say the report actually underestimates that number.<sup>22,25,26</sup> **However, nobody involved in patient safety research disputes the fact that medical errors are a problem that must be taken seriously. They undermine the quality of healthcare and must be addressed in a systematic way so as to assure that people get what they expect and deserve when they seek medical care.**

---

**References**

1. Kohn L, Corrigan J, Donaldson M (eds). *To Err Is Human: Building a Safer Health System*. Washington DC: National Academy Press, 2000.
2. Johnson JA, Bootman JL. Drug-related morbidity and mortality. A cost-of-illness model. *Arch Intern Med* 1995; 155:1949-56.
3. Meyer G, Foster N, Christrup S, Eisenberg J. Setting a Research Agenda for Medical Errors and Patient Safety. Health Services Research 2001.
4. Sexton JB, Thomas EJ, RL H. Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *BMJ* 2000; 320:745-49.
5. Lawrence D. Improving Patient Safety: Improving Teams, Trust, and Technology. New Visions for Health Care. Vol. 2, 2000:1-2.
6. Accelerating Change Today for America's Health. National Coalition on Health Care and Institute for Healthcare Improvement (IHI), 2001.
7. Massachusetts Health Quality Partners, Inc. at [www.mhqp.org](http://www.mhqp.org), 2001.
8. Cohen M. *Medication Errors*. Sudbury, MA: Jones and Bartlett, 1999.
9. Bates DW, Leape LL, Cullen DJ, et al. Effect of Computerized Physician Order Entry and a team intervention on prevention of serious medication errors. *JAMA* 1998; 280:1311-6.
10. Bates DW, Teich JM, Lee J, et al. The impact of Computerized Physician Order Entry on medication error prevention. *J Am Med Inform Assoc* 1999; 6:313-21.
11. Tierney WM, Miller ME, Overhage JM, McDonald CJ. Physician inpatient order writing on microcomputer workstations. Effects on resource utilization. *JAMA* 1993; 269:379-83.
14. Joint Commission on the Accreditation of Healthcare Organizations, Sentinel Event Glossary, 2000.
15. Cook R, Woods D, Miller C. *A Tale of Two Stories: Contrasting Views of Patient Safety, Assembling the Scientific Basis for Progress on Patient Safety*, Chicago: National Patient Safety Foundation at the AMA, 1998.
16. Committee on the Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press, 2001.
17. Cook R. A brief look at the New Look in error, safety, and failure of complex systems. Chicago: Cognitive Technologies Laboratory, 1999.

18. Brennan TA, Leape LL, Laird NM, et al. Incidence of adverse events and negligence in hospitalized patients. Results of the Harvard Medical Practice Study I. *N Engl J Med* 1991; 324:370-6.
19. Leape LL, Brennan TA, Laird NM, et al. The nature of adverse events in hospitalized patients. Results of the Harvard Medical Practice Study II. *N Engl J Med* 1991; 324:377-84.
20. Thomas EJ, Studdert DM, Burstin HR, et al. Incidence and types of adverse events and negligent care in Utah and Colorado. *Med Care* 2000; 38:261-71.
21. Thomas EJ, Studdert DM, Newhouse JP, et al. Costs of medical injuries in Utah and Colorado. *Inquiry* 1999; 36:255-64.
22. Leape L et al. (Committee on the Quality of Health Care in America). The Institute of Medicine Report on Medical Errors: Misunderstanding Can Do Harm. Medscape; MedGenMed, September 19, 2000.
23. Clement J, McDonald CJ, Weiner M, Hui SL. Deaths due to medical errors are exaggerated in Institute of Medicine report. *JAMA* 2000; 284:93-5.
24. Rodney A, Hayward RA, Timothy P, Hofer TP. Estimating hospital deaths due to medical errors: Preventability is in the eye of the reviewer. *JAMA* 2001; 286:415-20.
25. Leape LL. Institute of Medicine medical error figures are not exaggerated. *JAMA* 2000; 284:95-7.
26. Weingart SN, Ship AN, Aronson MD. Confidential clinician-reported surveillance of adverse events among medical inpatients. *J Gen Intern Med* 2000; 15:470-7.