

# Prevention of Medical Errors

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## Purpose of Course

- To reduce risk of medical errors occurring in optometrists' offices
- To improve patient safety
- As of May 8, 2002 a new rule has been added to 64B13-5.001 (8). Licensees are required to complete a 2-hour course relating to prevention of medical errors as part of the licensure and renewal process.
  - All medical specialties must complete similar course
  - In response to the Institute of Medicine (IOM) report, the Florida State legislature mandated that all licensees must complete a two-hour course on prevention of medical errors, which meets the criteria of Florida Statute 456.013, for initial licensure and biennial renewal. The 2-hour course shall count towards the total number of continuing education hours required for the profession. The course shall be approved by the board or department, as appropriate, and shall include a study of root cause analysis, error reduction and prevention, and patient safety. If the course is being offered by a facility licensed pursuant to chapter 395 for its employees, the board may approve up to 1 hour of the 2-hour course to be specifically related to error reduction and prevention methods used in that facility.

## Epidemiology

- November 1999, the IOM revealed a hidden epidemic in the United States:
  - Medical errors, which result in injury to 1 in every 25 hospital patients and an estimated 44,000 to 98,000 deaths each year. Even the lower estimate makes medical errors more deadly than breast cancer (42,297), motor vehicle accidents (43,458) or AIDS (16,516).
  - Medical errors cost the economy from \$17 to \$29 billion each year.
- Agency for Healthcare Research and Quality (AHRQ) has shown that medical errors result most frequently from systems errors-organization of health care and how resources are provided in the delivery system.
  - Only rarely are medical errors the result of carelessness or misconduct of a single individual.
- Two studies in the IOM report estimate that between 44,000 and 98,000 people are killed each year from medical errors.<sup>1</sup>
- Medication errors are thought to cause 7,000 deaths annually – more than the 6,000 deaths that occur each year in the workplace. The annual cost of medication errors is at least \$2 billion.<sup>1</sup>
- Costs: Total national costs (lost income, lost household production, disability, health care costs) are estimated to be between \$37.6 billion and \$50 billion for

adverse events and between \$17 billion and \$29 billion for preventable adverse events.

- Preventable mistakes in hospitals alone are thought to cost from 2 percent to 4 percent of national health expenditures.<sup>1</sup>
- Forty-two percent of randomly selected Americans said they had personal knowledge of a medical error that had happened to themselves, a relative or a friend, according to an October 1997 poll financed by the National Patient Safety Foundation, an independent group established by the American Medical Association.

1. "To Err Is Human: Building A Safer Health System." Institute of Medicine. December 1999.

### **Types of Medical Errors**

- The IOM report defines an error as:
  - The failure of a planned action to be completed as intended (i.e., error of execution)
  - The use of a wrong plan to achieve an aim (i.e., error of planning).
- An adverse event is an injury caused by medical management rather than the underlying condition of the patient. An adverse event attributable to error is a preventable adverse event, also called a sentinel event, because it signals the need to ask why the error occurred and make changes in the system.

### **Understanding Why Errors Happen**

- **Error** is defined as the failure of a planned action to be completed as intended (e.g., error of execution [prescribing the correct medication, but the wrong dosage]) or the use of a wrong plan to achieve an aim (e.g., error of planning, [making the wrong diagnosis or treatment])
- **Active Errors** Active errors occur at the level of the frontline operator, and their effects are felt almost immediately. [**Placing a topical steroid on an active Herpetic epithelial keratitis**] This is sometimes called the sharp end.
- **Latent errors** Latent errors tend to be removed from the direct control of the operator and include things such as poor design, incorrect installation, faulty maintenance, bad management decisions, and poorly structured organizations. [**Improperly diagnosing a pseudo-dendrite when it is indeed a dendrite**] These are called the blunt end.

### **Conditions that Create Errors**

- **Precursors or Preconditions** Although good managerial decisions are required for safe and efficient patient care, they are not sufficient. There is also a need to have the right equipment, well-maintained and reliable; a skilled and knowledgeable workforce; reasonable work schedules, well-designed jobs; clear guidance on desired and undesired performance. Any given precondition can contribute to a large number of unsafe acts. For example, training deficiencies can show up as high workload, undue time pressure, inappropriate perception of hazards, or motivational difficulties. Preconditions are latent failures embedded in the system.

- Surgical Errors
  - Surgical adverse events accounted for two-thirds of all adverse events and 1 of 8 hospital deaths
  - Wrong-site surgery was most common in orthopedic procedures. Risk factors contributing to the error included more than one surgeon involved in the case, multiple procedures performed during a single operating room visit, and unusual time pressures, particularly pressure to speed up preoperative procedures.

### **Diagnostic Inaccuracies**

- Incorrect diagnoses may lead to incorrect and ineffective treatment or unnecessary testing, which is costly and sometimes invasive.
- Inexperience with a technically difficult diagnostic procedure can affect the accuracy of the results. (Hla 1994) Study that demonstrated that measuring blood pressure with the most commonly used type of equipment often gives incorrect readings that may lead to mismanagement of hypertension.

### **System Failures**

- Although errors in medication, surgery, and diagnosis are the easiest to detect, medical errors may result more frequently from the organization of healthcare delivery and the way that resources are provided to the delivery system. (Latent errors)

### **Factors and Situations that Increase the Risk of Errors**

- Fatigue
- Alcohol and/or other drugs
- Illness
- Inattention/Distracted - A noisy, busy waiting room can make it difficult to concentrate on one patient's care, especially if you know that other patients are waiting to see you.
- Emotional states - Anger, anxiety, fear and boredom can all impair job performance and lead to errors. A heavy workload, conflict with other staff or with patients, and other sources of stress increase the likelihood of errors.
- Unfamiliar situations or problems - doctors who "float" from practice to practice may not have the expertise needed for all situations.
- Communication problems - Lack of clear communication among staff or between providers and patients is one of the most common reasons for error.
- Hard-to-read handwriting

### **Medication Errors**

- According to the U.S. Pharmacopeia (USP) (2000), the three most frequently reported types of medication errors were:
  1. Omission errors (failure to administer an ordered medication dose).
  2. Improper dose/quantity errors (any medication dose, strength or quantity that differs from that prescribed).

3.Unauthorized drug errors (the medication dispensed and/or administered was not authorized by the prescriber); this category includes dispensing or administering the wrong drug.

### **Mistakes in Writing Prescriptions Dispensing Errors**

#### **Drug look-a-like and Sound-a-like**

- Problems related to the use of pharmaceutical drugs account for nearly 10 percent of all hospital admissions, and significantly contribute to increased morbidity and mortality in the United States (Bates, 1995).
- In the cited Harvard Medical Practice Study, 19.4 percent of all disabling adverse events were caused by drugs, of which 45 percent were due to medication errors. In that study, 30 percent of those with drug-related injuries died.
- In a study of inpatient care in two tertiary care hospitals, errors in ordering and administering medicines accounted for 56 to 34 percent respectively, of preventable adverse drug events. (Bates 1995)
- A follow-up study showed that dosage errors, in particular, were primarily due to the physician's lack of knowledge about the drug or about the patient for whom it was prescribed.
- Anyone administering medication should observe the following six "rights:"
  1. Right patient
  2. Right drug
  3. Right dose
  4. Right dosage form
  5. Right route
  6. Right time
- Patients can:
  - Tell physicians about all medications they are taking and responses/reactions to them
  - Ask for information in terms they understand before accepting medications
- Providing Organizations and Practitioners can:
  - Educate patients
  - Put allergies and medications on patient records
  - Stress dose adjustment in children and older persons
  - Limit access to high hazard drugs
  - Use protocols for high hazard drugs
  - Computerize drug order entry
  - Use pharmacy-based IV and drug mixing programs
  - Avoid abbreviations
  - Standardize drug packaging, labeling, storage
  - Use "unit dose" drug systems (packaged and labeled in standard patient doses)
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### **Error Prevention**

- Identification and Evaluation of Latent Error

- Hospital Mortality and Morbidity meetings
  - Recourse free error reporting protocol
- Automated equipment/ recall system
  - Automated medication ordering in hospitals
- Medical record keeping
- Professional Continuing Education
- Doctor-patient Communication
  - Know all your patient's medications, vitamins and herbs.
  - Question about allergies and past adverse reactions to medications
  - Write prescriptions legibly so patient and pharmacist can read them

#### **Patient Education:**

- Do not rely on the pharmacist.
- What the medicine is for?
- How it is supposed to be taken?
- What side effects are likely?
- What to do if side effects occur?
- Is the medication safe to take with other medicines or dietary supplements (drug interactions)?
- What food, drink or activities should patient avoid while on the medication?
- Have patient check medicine from pharmacy
- Encourage patients' questions

#### **Intra/Inter-Professional Communication**

- Communicate with patient's other healthcare providers and coordinate care

#### **Populations of Special Vulnerability**

- Older Patients
  - Medication errors can have life-threatening or even fatal effects, due to the declining ability of the aging body to metabolize drugs.
  - Visual, hearing or cognitive problems may lead to misunderstanding of instructions or failure to question an incorrect or unfamiliar drug. When caring for older patients, communication with a responsible family member or other patient advocate is essential.
- Infants and children
  - The younger the patient, the greater the risk of serious medication errors
  - Infants and young children do not have the communication abilities needed to alert clinicians about potential drug errors or adverse effects that they experience. Infants, particularly newborns, are physiologically ill equipped to deal with drug errors.
- Persons with Limited English Language Skills and/or Limited Literacy
  - Bilingual care providers, translators or interpreters, or other communication experts.

## Reporting Errors

- Mistaken attitude in healthcare that errors are solely the fault of individual practitioners has proved a major barrier to reporting
- Efforts have focused almost entirely on making providers more careful, reinforced by fear of punishment when they fail.
- When the fear of punishment is removed, reporting of errors increases by as much as 10 to 20 fold
- Statute 395.0197 mandates internal reporting of any adverse incident (event) "over which health care personnel could exercise control, and which is associated in whole or in part with medical intervention, rather than the condition for which such intervention occurred, and which:
  - (a) Results in one of the following injuries:
    1. Death;
    2. Brain or spinal damage;
    3. Permanent disfigurement;
    4. Fracture or dislocation of bones or joints;
    5. A resulting limitation of neurological, physical, or sensory function that continues after discharge from the facility;
    6. Any condition that required specialized medical attention or surgical intervention resulting from non-emergency medical intervention, other than an emergency medical condition, to which the patient has not given his or her informed consent; or
    7. Any condition that required the transfer of the patient, within or outside the facility, to a unit providing a more acute level of care due to the adverse incident, rather than the patient's condition prior to the adverse incident
- The risk-management reporting system must:
  - Investigate and analyze the frequency and causes of adverse incidents to patients
  - Educate facility staff and agents
  - Analyze patient grievances related to patient care

## Root Cause Analysis (RCA)

- JCAHO requires that a thorough, credible root cause analysis (RCA) be performed for each reported sentinel event. The goal of a Root Cause Analysis is to find out:
  - What happened
  - Why did it happen
  - What do you do to prevent it from happening again
- Root Cause Analysis (RCA) is a tool for identifying error prevention strategies. It is a process for discovering basic and contributing causes of error with the continuing goal of preventing recurrence.
- RCA is an interdisciplinary process involving:
  - Experts from all services involved
  - Those who are the most familiar with the situation

- Asking why at each level of cause and effect
  - Identification of changes needed
  - As great a degree of impartiality as possibility
- According to the VA National Center for Patient Safety (2002), a thorough RCA must include:
    1. Determination of human and other factors
    2. Determination of related processes and systems
    3. Analysis of underlying cause and effect systems through a series of WHY questions
    4. Identification of risks and their potential contributions
    5. Determination of potential improvement in processes or systems

A credible RCA must:

1. Include participation by the leadership of the organization and those most closely involved in the processes and systems.
2. Be internally consistent.
3. Include consideration of relevant literature.

### **Improving Office Safety**

- Standards for Health Professionals
- Licensing, Certification and Accreditation
- Role of Health Professional Societies and Groups
- Infection Prevention
- OSHA
- CPR/EMS
- Handling common medical emergencies
  - Vasovagal syncope

### **Reducing Medical Errors within the Optometric Practice**

- Malpractice and How it Happens – a look at some cases
  - Failure to diagnose retinal detachment
  - Failure to detect glaucoma
  - Failure to detect tumor
  - Where are the cases related to poor therapeutic use?
- Malpractice and how to avoid it
  - Putting patient needs over the doctor's needs
  - Do not make the findings fit the diagnosis
  - Insist that everything make sense
  - Do not disregard patient complaints
  - Check drug facts and print medical prescriptions
  - Document! Document! Document!
    - And make it legible!
  - DFE! DFE! DFE!
  - Fields! Fields! Fields!