Prevention of Medical Errors for Florida Occupational Therapists

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COURSE OBJECTIVE: The purpose of this course is to prepare Florida occupational therapists and occupational therapy assistants to prevent medical errors in the practice setting using current, evidence-based information.

LEARNING OBJECTIVES
Upon completion of this course, you will be able to:

• Define medical error, adverse event, near miss, never event, and sentinel event.
• List causes and types of medical errors.
• Discuss the scope and significance of medical errors in the current U.S. healthcare environment.
• Identify populations of special vulnerability to medical errors.
• Describe strategies and interventions to prevent medical errors.
• Describe elements of a root cause analysis.
• Discuss Florida’s medical error reporting requirements.

Medical errors are a serious public health problem that threatens patient safety. In the 1950s medical errors were considered to be the price paid for modern diagnosis and therapy. But over the ensuing decades, medical errors have increased to epidemic proportions and currently are the third leading cause of death in the United States. Those in leadership roles claim that error reduction is extremely difficult due to the complex nature of healthcare facilities and the fact that patients are very sick. Our expanding awareness of this issue demands improvement in our understanding of the problem and in finding effective solutions and prevention strategies to make our healthcare system safer.
Acknowledging that errors happen, learning from them, and working to prevent future errors represents a major change in the culture of healthcare—a shift from blame and punishment to analysis of the root causes of errors and the creation of strategies to improve. In other words, healthcare organizations need to create a culture of safety that views medical errors as opportunities to improve the system. Every person on the healthcare team has a role in making healthcare safer for patients and workers.

DEFINING MEDICAL ERRORS

The Institute of Medicine (1999) defines an error as “the failure of a planned action to be completed as intended (i.e., error of execution) or the use of a wrong plan to achieve an aim (i.e., error of planning).” To ensure consideration of all relevant issues related to medical errors, the Quality Interagency Coordination Task Force (a federal entity overseen by the Agency for Healthcare Research and Quality), has expanded the definition as follows:

An 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. Errors can include problems in practice, products, procedures, and systems.

Adverse Events, Sentinel Events, and Near Misses

An adverse event is an injury caused by medical management rather than the underlying condition of the patient. An adverse event attributable to an error is a preventable adverse event.

The Joint Commission defines a sentinel event as “an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. The phrase ‘or the risk thereof’ includes any process variation for which a recurrence would carry a significant chance of a serious adverse outcome.” Sentinel events are so named because they signal the need for immediate investigation and response (JC, 2013a).

Near misses are potential adverse events, errors that could have caused harm but did not, either by chance or because something or someone in the system intervened. Near misses provide opportunities for developing preventive strategies and actions and should receive the same level of scrutiny as adverse events.

Never Events

Never events are errors that should never happen. The National Quality Forum identifies these as Serious Reportable Events (SREs) and groups them into the categories of:

- Surgical
- Product/device
- Patient protective
Classification of Errors

Research on why humans make errors (Reason, 1990) has identified two types of errors: active and latent. **Active errors** (human errors) are those that involve individuals who are actually doing a task, and their effects are felt almost immediately. **Latent errors** are errors in system or process design, faulty installation or maintenance of equipment, or ineffective organizational structure.

Latent errors are present but hidden and may go unnoticed for a long time with no ill effect. However, when a latent error combines with an active human error, an event occurs. The active human error triggers the hidden latent error causing an adverse event.

Root Causes of Medical Errors

A root cause is an action, deficiency, or decision that if corrected, eliminated, or avoided will eliminate the undesirable consequence. The most common root cause of medical errors is communication problems, which can include unclear lines of authority, inadequate error sharing, or disconnected reporting systems. Other root causes involve:

- Human factors, which are aberrations in mental functioning that include unconscious glitches in automatic activity, misapplied expertise, lack of knowledge, or misinterpretation of a problem
- Patient-related issues, including improper patient identification, incomplete assessment of the patient, failure to obtain consent, inadequate patient education, and the complexity of care in areas such as ICU
- Organizational transfer of knowledge, including deficiencies in orientation or training, lack of education, or inconsistent education and training for healthcare providers
- Staffing patterns and work flow, including inadequate staffing or supervision
- Technical failures involving devices/equipment and complications or failure of implants or grafts
- Inadequate policies and procedures that show a commitment to patient safety (Leape, 2014)
THE SCOPE OF THE PROBLEM

A decade and a half has passed since the IOM published *To Err Is Human: Building a Safer Health System*. This landmark report revealed an epidemic of medical errors in the United States, with an estimate of up to 98,000 people dying each year due to mistakes made in hospitals (IOM, 1999). In 2010, the Office of Inspector General for the Department of Health and Human Services reported that more than 180,000 patients enrolled in Medicare alone die in a given year because of poor hospital care (U.S. DHHS, 2010).

In 2013, the *Journal of Patient Safety* reported that between 210,000 and 440,000 patients each year who enter a hospital experience some type of preventable harm that contributes eventually to their death, making medical errors the third-leading cause of death in America behind heart disease (the first) and cancer (the second). The study also reported that tens of thousands also die from preventable mistakes made outside hospitals in outpatient settings and the community, including deaths from missed diagnoses or injuries from medication (James, 2013).

A recent study of medical malpractice claims showed that slightly more than half (52.5%) of the paid claims related to outpatient care. Most malpractice claims for hospital care are related to surgical errors, whereas most claims for outpatient care are related to missed or late diagnosis. Medication errors are also common in outpatient malpractice claims, particularly those related to transition from hospital to community-based care (Bishop et al., 2011).

The High Price of Medical Errors

Medical errors add substantially to the direct costs of healthcare and to the loss of income. “More than 400,000 Medicare ‘never events’ occurred in the United States in 2008, with an estimated total cost of $3.7 billion. The cost of these events constitutes 22% of the total cost for medical errors” (van den Bos et al., 2011).

It is not uncommon for healthcare facilities to take cost-containment measures that reduce staffing, particularly RN staffing. When this occurs there is an increase in medical errors and poor outcomes. An analysis of data from nearly 200,000 hospital admissions and 176,000 nursing shifts of eight hours each showed that staffing of RNs below target levels was associated with increased mortality (Needleman et al., 2011).

Most Commonly Occurring Medical Errors

Errors can be placed into five general categories: surgical, diagnostic, medication, devices and equipment, and systems failures (including healthcare-associated infections, falls, and healthcare technology).

SURGICAL ERRORS

Surgical errors (or surgical adverse events) account for a high percentage of all adverse events. According to a study by the Johns Hopkins University School of Medicine reported in 2012, at
At least 4,000 surgical errors occur in the United States each year. National data was analyzed and it was estimated that 80,000 “never events” occurred in U.S. hospitals between 1990 and 2010 and that the figure may be on the low side (Johns Hopkins Medicine, 2012).

The Joint Commission found that robotic surgery, a relatively new technological procedure, resulted in an increase in surgery-related sentinel events from 2006 to 2013. Complications were usually due to hemorrhage caused by lacerations and injury to surrounding tissues (JC, 2014a).

DIAGNOSTIC INACCURACIES AND DELAYS

The Joint Commission estimates the death toll from diagnostic errors at 40,000 to 80,000 per year, with 40,500 preventable deaths arising in the ICU alone. One patient in every six has personally been affected or has had a family member or friend affected. Almost half of pediatricians come upon one or more diagnostic errors every month, and 1 in every 1,000 primary care encounters will cause preventable harm from diagnostic error (JC, 2014b). Although delayed or inaccurate diagnoses are often attributed to physician error, members of the healthcare team can and do contribute to delayed or inaccurate diagnoses due to information gaps and communication problems.

Most diagnostic errors occur in primary care settings and most frequently in the testing phase (failure to order, faulty interpretation of results, missed follow-up and tracking) (Joszt, 2013).

Other errors were attributed to failure to make referrals and patient-related issues such as inaccurate medical histories (Wood, 2014).

Misdiagnosis occurs in diagnostic radiology when the radiologist or interpreting physician fails to see an abnormality that is present on the image due to what has been called an unexplainable “psycho-visual phenomenon.” Many other radiologic errors are cognitive: the abnormality is plainly visible but is not appreciated because of lack of understanding or poor judgment (Berlin, 2011).

The most common cognitive error that clinicians make is the premature closure of the diagnostic process, where common benign diagnoses are made for patients with uncommon serious disease, signaling a need to broaden differential diagnosis. It is to be noted that a lot of symptoms patients present with are vague, such as fatigue, resulting in a vague differential diagnosis.

Sentinel event statistics compiled by the Joint Commission from 2004 to 2013 show that one of the most frequently reported events is delay in treatment. In 2013 delay in treatment was the third most documented reviewable sentinel event. This includes delays in medication, lab testing, physical therapy, or any other kind of treatment (Wyatt, 2014).

Diagnostic errors increase costs due to the need for hospital readmission that could have been avoided if the correct diagnosis had been made. Another source of unnecessary costs is unwarranted treatments given due to a wrong diagnosis (Wood, 2014).
MEDICATION ERRORS

The National Coordinating Council for Medication Error Reporting and Prevention (2014) defines a medication error as:

Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient, or consumer. Such events may be related to professional practice, healthcare products, procedures, and systems, including prescribing; order communication; product labeling, packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.

In a study conducted by the Economic Cycle Research Institute (ECRI) patient safety organization, it was found that the phase of the medication process in which the highest number of medication errors occurred was during the administration phase, and more than a third involved intravenous errors (Oh, 2012a).

TUBING MISCONNECTIONS

According to the Joint Commission (2014c), tubing and catheter misconnections are “a persistent and potentially deadly occurrence.” Although misconnections are often caught and corrected before the patient is injured, these AEs can have life-threatening consequences. This is a complex issue involving medication errors and equipment design problems. Medications are being delivered via the wrong route, and equipment design leads to making such misconnections.

Luer connectors were implicated in many of the misconnections. These universal connectors have a “female” and a “male” component designed to lock together. Unfortunately, this universal design allows tubes or catheters with dissimilar function to be connected, with potentially disastrous results. Other factors contributing to misconnections include the routine use of tubes or catheters for unintended purposes, such as using IV extension tubing for epidurals, irrigation, drains, and central lines.

In addition, movement of a patient from one setting to another and staff fatigue related to working consecutive shifts contribute to these adverse events (JC, 2014c).
Patient’s feeding tube was inadvertently connected to the instillation port on the ventilator in-line suction catheter, delivering tube feeding into the patient’s lungs, causing death. (Source: FDA, 2013.)

PROBLEMS RELATED TO MEDICAL DEVICES AND EQUIPMENT

Design flaws, misuse, and malfunction of medical devices and equipment are all common causes of medical errors. Subtle differences in a familiar pattern using a device can affect the speed and accuracy of data entry, and the lack of standardization invites user mistakes. Poor medical device design and lack of usability testing have also been repeatedly discussed as being key factors in many device-related incidents.

An increasing number of medical devices are also implanted in patients. These include cardiac pacemakers, defibrillators, and deep brain stimulation neurotransmitters to control tremors in people with Parkinson’s disease. Any malfunction of such devices can be serious and even life threatening.

HEALTHCARE-ASSOCIATED INFECTIONS (HAIs)

HAIs are considered a systems failure. According to the CDC, 1 of every 20 hospitalized patients will experience a healthcare-acquired infection. These infections lengthen hospital stays, cost U.S. hospitals an estimated $33 billion annually, increase patients’ pain and suffering, and can prove fatal.
Failure of physicians, nurses, and other caregivers to practice basic hand hygiene helps spread bacteria, some of which are antibiotic-resistant and can prove life threatening. Studies have shown that hospital workers wash their hands as little as 30% of the time that they interact with patients and that physicians tend to be the most resistant to hand hygiene (Hartocollis, 2013).

**FALLS**

Falls are also considered a systems failure. Falls are a commonly reported sentinel event in 24-hour care facilities and can be fatal. Each year, one third of people over 65 suffer a fall, and one third of these falls cause both fatal and nonfatal injuries. In 2013 the Joint Commission reviewed 82 fall-related events resulting in death or permanent loss of function (JC, 2013b).

Older patients are not the only population at risk. Any patient who has had excessive blood loss may experience postural hypotension, increasing the risk of falling. Maternity patients or other patients who have epidural anesthesia are at risk for falls due to decreased lower-body sensation.

Risk factors associated with falling are clinically identified as either intrinsic or extrinsic. Intrinsic factors include the characteristics or conditions of a person, which can include vision, gait, and health history. Intrinsic factors may or may not be modifiable. Extrinsic factors involve conditions outside the person, such as environmental hazards and medications. Extrinsic factors are modifiable.

**PROBLEMS WITH HEALTH INFORMATION TECHNOLOGY (IT)**

The Institute of Medicine (IOM) has evaluated safety concerns and identified actions that can be taken to lessen safety risks linked with health IT. The literature about health IT and patient safety is inconclusive, yet it shows substantial potential hazards for patient safety (IOM, 2012).

**Electronic Health Records (EHRs)**

While adoption of EHR systems offers to provide substantial benefits, there are serious unintended consequences that have emerged from their implementation. Currently, there is no regulatory framework to monitor EHR system safety and no agreed-upon design standards.

Many providers find that EHRs decrease efficiency and add hours to their workday due to non-user-friendly interfaces and difficult navigation. They report many EHR systems are awkward and time consuming. In addition, they report the computer comes between the patient and provider and fosters distractions.

**Computerized Prescriber Order Entry (CPOE)**

CPOE can help hospitals reduce ADEs, but only about one third of hospitals have a CPOE system and less than half use barcode medicine administration (BCMA).
(Halvorson, 2011). Research shows that BCMA can reduce the rate of potential ADEs as much as 50%, but errors can still occur (Poon et al., 2010).

Only 8% of U.S. hospitals have fully implemented CPOE systems. One obstacle is the upfront cost, which is approximately $1.9 million, with $500,000 per year for maintenance. Another obstacle is resistance by physicians to utilize such tools, instead preferring to rely on practice experience (Leapfrog, 2014).

**Practice Errors in Rehabilitation Therapy**

Practice errors are not limited to medication, diagnostic, or equipment errors, nor are they limited to nurses, pharmacists, and physicians. They also occur in the fields of physical and occupational therapy. However, compared to other healthcare professions, few studies have been conducted to examine the nature of rehab-specific practice errors. Of those studies that have been done, most errors in these practice realms have been shown to occur in the intervention phase of the therapy, which includes:

- Communication
- Education
- Documentation
- Supervision
- Treatment

Errors have been attributed to:

- Misjudgment
- Overload or time restraints
- Insufficient or mis-communication
- Inexperience or lack of knowledge
- Issues related to the patient
- Inadequate preparation

**POPULATIONS OF SPECIAL VULNERABILITY**

**Older Adults**

People age 65 years and older consume more prescription and over-the-counter (OTC) medications than any other age group. Although medications may improve the quality of life and health, they also hold the potential for misuse, overuse, and life-threatening complications.

The older adult population (ages 65 and older) receives more than 50% of all prescription medication, and most who engage in the healthcare system take 6 to 8 medications
(polypharmacy). The prevalence of older adults taking five or more medications is close to 7%. In addition to prescription medications, older adults purchase 40% of over-the-counter medications, use OTCs three times more, and use herbals twice as much as the younger population.

The risk for an adverse drug event is 15% with two medications, 58% with five, and 82% with seven or more medications. Nearly 17% of hospital admissions are due to an adverse drug event, and the rate increases to 33% in patients 75 years of age and older. Additionally, while in hospital, 17% of older adults experience an adverse drug event (Bland, 2013).

**Visual, hearing, or cognitive problems** may lead to misunderstanding of instructions or failure to question an incorrect or unfamiliar drug.

Older adult patients are also at high risk of falling, and medications increase that risk. Researchers in Sweden found that two thirds of patients with hip fracture were prescribed fall risk-increasing drugs before fracture, and the number increased after fracture (Kragh et al., 2011).

Prescribing physicians need to consider the **slowed metabolism** and excretion of drugs in older adult patients—not only the choice of drugs but also the dosage and timing of administration. Because older adults experience a decrease in total body water and a relative increase in body fat, water-soluble drugs become more concentrated and fat-soluble drugs have a longer half-life.

**Infants and Children**

The potential for ADEs is higher in the pediatric population than that found in hospitalized adult patients. The factors that place them at higher risk include:

- Changing pharmacokinetic parameters between patients at various ages and stages in development
- Need for calculation of individualized doses based on the patient’s age, weight, body surface area, and clinical condition
- Need for precise dosage measurement and appropriate delivery systems
- Lack of communication abilities

Medication dosing errors occur in up to 17.8% of hospitalized children (Wesley & Washick, 2013).

**Patients with Limited English and/or Health Literacy**

The National Institutes of Health (2014) reports that less than 60% of the U.S. population has English as a first language, and 10 million Americans speak no English at all. Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand
basic health information and services needed to make appropriate health decisions. Low health literacy is linked to a higher risk of death and more emergency room visits and hospitalizations.

**AGENCY, FEDERAL, AND STATE EFFORTS**

Oversight of healthcare quality in the United States is accomplished through both professionally based accrediting bodies in the private sector and through federal and state regulatory agencies.

**The Joint Commission**

The Joint Commission is an independent not-for-profit agency whose mission is to continuously improve the safety and quality of care provided to the public.

**SENTINEL EVENT POLICY**

The Joint Commission encourages, but does not require, reporting of any sentinel event. However, in the interest of continuous improvement in safety and quality of care, the Joint Commission requires that healthcare organizations:

- Have a process in place to recognize sentinel events
- Conduct thorough and credible root cause analyses that focus on process and system factors, not on individual blame
- Document a risk-reduction strategy and internal corrective action plan within 45 days of the organization becoming aware of the sentinel event

The sentinel event policy (JC, 2013c) has four goals:

1. To have a positive impact in improving patient care, treatment, and services and preventing sentinel events
2. To focus the attention of an organization that has experienced a sentinel event on understanding the factors that contributed to the event (such as underlying causes, latent conditions and active failures in defense systems, or organizational culture) and on changing the organization’s culture, systems, and processes to reduce the probability of such an event in the future
3. To increase the general knowledge about sentinel events, their contributing factors, and strategies for prevention
4. To maintain the confidence of the public and accredited organizations in the accreditation process

Although accredited facilities are expected to identify and respond appropriately to all sentinel events, but not to report them, if the Joint Commission becomes aware of an event, facilities are required to submit the findings of their root cause analyses and corrective action plans. This
information can be included in the Joint Commission’s review of sentinel events, helping track national trends and develop strategies for improving patient safety.

**JOINT COMMISSION NATIONAL SAFETY GOALS**

The Joint Commission has issued mandatory goals and recommendations to improve patient safety. Hospitals and other organizations will be evaluated by accreditation representatives to see whether these recommendations or acceptable alternative measures are being implemented. Failure to implement the recommendations could result in loss of accreditation and federal funding.

**Hospital**
- Identify patients/residents correctly
- Improve staff communication
- Use medicines safely
- Prevent infection
- Organizational identification of risk inherent to the patient population
- Universal protocol

**Long-Term Care**
- Identify patients/residents correctly
- Use medicines safely
- Prevent infection
- Reduce risk of falls
- Prevent pressure ulcers

**Home Care**
- Identify patients/residents correctly
- Use medicines safely
- Prevent infection
- Reduce risk of falls

**Ambulatory**
- Identify patients/residents correctly
- Use medicines safely
- Prevent infection
- Reduce risk of falls
- Organizational identification of risk inherent to the patient population
- Universal protocol

(Joint Commission, 2014d)
Misreading medical abbreviations can also be a cause of serious medication errors, and the Joint Commission has created a “do not use” list of abbreviations that endanger patients’ safety and that it requires its members to follow.

ROOT CAUSE ANALYSIS (RCA)

The Joint Commission requires that a thorough, credible root cause analysis and corrective action plan be performed for each reported sentinel event within 45 days of the event’s occurrence or of the organization’s becoming aware of the event (JC, 2013d). (See also “Root Causes of Medical Errors” earlier in this course.)

Root cause analysis is a tool for identifying prevention strategies. It is a process that is part of the effort to build a culture of safety and move beyond the culture of blame. In RCA, basic and/or contributing causes are discovered in a focused review process similar to diagnosis of disease—with the goal always in mind of preventing recurrence. The goal of a root cause analysis is to find out:

- Who was involved
- When it happened
- What happened
- Why it happened
- What to do to prevent it from happening again

Root cause analysis is:

- Interdisciplinary, involving experts from the frontline services
- Involving those who are the most familiar with the situation
- Continually digging deeper by asking “why, why, why” at each level of cause and effect
- A process that identifies changes that need to be made to systems
- A process that is as impartial as possible

To be credible, a RCA must:

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

Accreditation Association for Ambulatory Health Care (AAAHC)

The Accreditation Association for Ambulatory Health Care was founded in 1999 by the AAAHC Institute for Quality Improvement, which offers ambulatory healthcare organizations
opportunities to learn about and become involved in performance measurement, benchmarking, and quality improvement. The studies conducted by the institute are designed specifically for ambulatory care environments (AAAHC, 2014).

Ambulatory care organizations are offered accreditation by AAAHC to demonstrate that the organization takes part in ongoing self-evaluation, peer review, and education to continuously improve its care and services. The organization performs on-site surveys by healthcare professionals at least every three years.

Federal Government Efforts

In 2006, Congress passed the Deficit Reduction Act of 2005, authorizing Medicare and Medicaid to tie healthcare facilities’ Medicare eligibility to the occurrence of preventable “never events,” and in 2007 the Center for Medicare and Medicaid Services issued a new rule denying reimbursement for treatment to hospitals for treatment of preventable errors, injuries, and infections.

PREVENTABLE COMPLICATIONS (“NEVER EVENTS”) NO LONGER COVERED BY MEDICARE AND MEDICAID

The following preventable complications are no longer reimbursed by Medicare and Medicaid if acquired during an inpatient stay:

- Foreign object retained after surgery
- Air embolism
- Blood incompatibility
- Stage III and IV pressure ulcers
- Falls and trauma
- Fractures and dislocation
- Intracranial injuries
- Crushing injuries
- Burns
- Electric shock
- Catheter-associated urinary tract infection
- Vascular catheter–associated infection
- Manifestations of poor glycemic control:
  - Diabetic ketoacidosis
  - Nonketoacidosis
  - Hyperosmolar coma
  - Hypoglycemic coma
  - Secondary diabetes with ketoacidosis
  - Secondary diabetes with hyperosmolarity
• Surgical site infection following:
  o Coronary artery bypass graft (CABG); mediastinitis
  o Bariatric surgery
  o Laparoscopic gastric bypass
  o Gastroenterostomy
  o Laparoscopic gastric restrictive surgery
• Surgical site infection following certain orthopedic procedures:
  o Spine
  o Neck
  o Shoulder
  o Elbow
• Deep vein thrombosis (DVT)/pulmonary embolism (PE) following total knee or hip replacement, with pediatric and obstetric exceptions
• Surgery on the wrong patient, wrong surgery on a patient, and wrong-site surgery


Florida Sentinel Event Law

Reporting sentinel events to the Joint Commission is voluntary. However, Florida law makes such reporting mandatory. Florida’s Comprehensive Medical Malpractice Reform Act of 1985 (F.S.395.0197) mandates that each licensed hospital and ambulatory surgery center implement a risk-management program with state oversight and an internal incident-reporting system. State oversight is provided by the Florida Agency for Health Care Administration (AHCA). Each licensed facility is required to hire a risk manager, licensed under F.S. 395–10974, who is responsible for implementation and oversight of the risk management program.

ADVERSE INCIDENTS TO BE REPORTED

The 2014 Florida Statute 395.0197 mandated internal reporting of any adverse incident (event) over which healthcare personnel could exercise control, that is associated in whole or in part with medical intervention rather than the condition for which such intervention occurred, and that:

1. Results in one of the following injuries:
   • Death
   • Brain or spinal damage
   • Permanent disfigurement
   • Fracture or dislocation of bones or joints
   • A resulting limitation of neurologic, physical, or sensory function which continues after discharge from the facility
• 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
• 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

2. Was the performance of a surgical procedure on the wrong patient, a wrong surgical procedure, a wrong-site surgical procedure, or a surgical procedure otherwise unrelated to the patient’s diagnosis or medical condition

3. Required the surgical repair of damage resulting to a patient from a planned surgical procedure, where the damage was not a recognized specific risk, as disclosed to the patient and documented through the informed-consent process

4. Was a procedure to remove unplanned foreign objects remaining from a surgical procedure

INTERNAL RISK MANAGEMENT PROGRAM REQUIREMENT

Every licensed facility must establish an internal risk management program that must:

• Investigate and analyze the frequency and causes of adverse incidents to patients
• Educate all non-physician personnel in risk management and risk prevention as part of their initial orientation
• Provide at least 1 hour of such education and training annually for all personnel of the facility working in clinical areas and providing patient care, except for licensed healthcare practitioners who are required to complete continuing education coursework pursuant to chapter 456 or their respective practice act
• Analyze patient grievances related to patient care
• Have a system for informing a patient or designee pursuant to state law that the patient was the subject of an adverse event
• Have an incident reporting system to report adverse incidents to the risk manager or designee within 3 business days after their occurrence

REQUIRED REPORTS

Licensed facilities in Florida are required to submit two types of reports to AHCA: Code 15 reports and annual reports.

**Code 15 reports** must be submitted to the agency within 15 calendar days after its occurrence for any of the following adverse incidents, whether occurring in the licensed facility or arising from healthcare prior to admission to the licensed facility:
• Death of a patient
• Brain or spinal damage
• Surgical procedure on the wrong patient
• Wrong-site surgical procedure
• Surgical procedure that is medically unnecessary or unrelated to patient diagnosis or medical condition
• Surgical report of damage from a planned surgical procedure, where damage is not a recognized specific risk
• Procedures performed to remove unplanned foreign objects remaining postoperatively

The annual report summarizes the incident reports that have been filed in the facility for that year, and includes:

• The total number of adverse incidents
• Types of adverse events listed by category and number of incidents occurring within each category
• Code numbers of each professional and individual directly involved and number of incidents each has been directly involved in
• Description of all malpractice claims filed against the facility, including number of pending and closed claims, the status and disposition of each claim

INSTITUTIONAL STRATEGIES FOR ADDRESSING ERRORS

Changes in organizational culture, involvement of leadership, education of providers, development of patient safety committees, adoption of safe protocols and procedures, and use of technology are all essential strategies healthcare facilities must consider in their efforts to reduce medical errors.

Creating a Culture of Safety

The mistaken attitude in healthcare that errors are solely the fault of individual practitioners has proven a major barrier to reporting. When the reporting of medical errors focuses on the identification and punishment of individual health professionals, there is a huge disincentive for reporting errors, and this punitive attitude severely limits the reporting of errors. In fact, research shows that when the fear of punishment is removed, reporting of errors actually increases.

One of the main goals of organizations working to improve patient safety should be to encourage the creation of a “culture of safety” in which medical errors are discussed openly and addressed thoroughly. A culture of safety includes:
• Acknowledgment of the high-risk, error-prone nature of an organization’s activities and the determination to achieve consistently safe operations

• A blame-free environment where individuals are able to report errors or near misses without fear of reprimand or punishment

• Encouragement of collaboration across ranks and disciplines to seek solutions to patient safety problems

• Organizational commitment of resources to address safety concerns (AHRQ, 2014)

“JUST CULTURE” MODEL

A challenge exists in distinguishing between a system that might cause errors, human error that might result in a bad outcome, and reckless behavior that intentionally puts lives or organizations at risk. One popular approach is the Just Culture model developed by David Marx and colleagues (2005), which helps differentiate human error from blameworthy errors. The Just Culture model involves:

• Creating an environment where staff can raise their hand when they see a risk or have made a mistake

• Rewarding reporting and placing a high value on open communication and knowledge

• A well-established system of accountability

• An organization that understands shared accountability

A just culture acknowledges that competent professionals make mistakes and recognizes that competent professionals may develop unhealthy norms such as shortcuts and routine rule violations, but has zero tolerance for reckless behavior.

Leadership

The National Quality Forum (2010) lists “Leadership Structures and Systems” as the first of 34 safe practices for better healthcare, stating: “Leadership structures and systems must be established to ensure that there is organization-wide awareness of patient safety performance gaps, direct accountability of leaders for those gaps, and adequate investment in performance improvement abilities, and that actions are taken to ensure safe care of every patient served.” The overarching goal should be to create and sustain a culture of safety rather than a culture of blame.

Health Information Technology (HIT)

HIT has great potential for improvement in the quality and safety of healthcare. Electronic health records (EHRs) should help reduce medication errors, avoid the need to repeat laboratory tests, and improve continuity of care across the healthcare system. Facilities should carefully select the
best system available, adopt best practices for EHR implementation and management, monitor how the health IT system is used, and report any adverse events.

INTERDISCIPLINARY INTERVENTIONS TO PREVENT MEDICAL ERRORS

Fall Prevention

PATIENT ASSESSMENT

Preventing falls begins with assessment of the patient using one of the several tools available, such as the Morse Fall Scale. It is recommended that assessment for fall risk should be done by nursing for every patient on admission. Reassessment should be done upon transfer of a patient from one unit to another, with any status change, following a fall, at regular intervals, and with changes in caregivers. Post-fall assessment should include a history of the fall from the patient and/or witnesses; the circumstances (e.g., time, location, activity); review of underlying illness, medications, and environmental conditions; and functional, sensory, and psychological status.

Other patient assessment tools are used by therapists for rehabilitation purposes. The use of therapy assessment tools allow the therapist to make recommendations to the rest of the healthcare team on how best to prevent a fall for a specific patient receiving rehab therapy.

MORSE FALL SCALE (MFS)

The MFS is used widely by nurses in both hospital and long-term care inpatient settings. The MFS requires systematic, reliable assessment of a patient’s fall risk factors upon admission, after a fall, upon change in status, and at discharge or transfer to a new setting. MFS subscales include assessment of:

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<th>Risk Factor</th>
<th>Score</th>
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| 1. History of falling; immediate or within 3 months | No = 0  
Yes = 25  |
| 2. Secondary diagnosis               | No = 0  
Yes = 15  |
| 3. Ambulatory aid                    | None, bed rest, wheelchair, nurse = 0  
Crutches, cane, walker = 15  
Furniture = 30  |
| 4. IV/heparin lock                   | No = 0  
Yes = 20  |
5. Gait/transferring

<table>
<thead>
<tr>
<th>Risk Level</th>
<th>MFS Score</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Risk</td>
<td>0–24</td>
<td>None</td>
</tr>
<tr>
<td>Low Risk</td>
<td>25–50</td>
<td>Standard fall prevention interventions</td>
</tr>
<tr>
<td>High Risk</td>
<td>51+</td>
<td>High-risk fall prevention interventions</td>
</tr>
</tbody>
</table>

Source: Oh, 2012b.

INPATIENT PREVENTION INTERVENTIONS

Fall prevention interventions include both standard and high-risk categories.

Standard fall prevention strategies:
- Orient the patient to the environment.
- Place the call light (bell) within reach and have the patient demonstrate its use.
- Ensure that necessary items are within the patient’s reach.
- Keep the hospital bed in low position and the brakes locked.
- Make certain the patient is wearing non-slip, well-fitting footwear.
- Provide a nightlight or other lighting.
- Keep floors clean and dry.
- Clean up spills immediately.
- Provide grab bars in patient bathrooms and rooms.
- Install handrails in hallways.
- Keep patient care areas free of clutter.

High-risk prevention strategies:
- Provide visual cues to communicate risk of falls.
  - Post a sign outside the patient’s door and in the room.
  - Apply a coded wristband.
  - Use designated color socks or blankets.
  - Post an alert in the medical record.
- Cue the patient for toileting at least every two hours while awake.
- Do not leave the patient unattended when assisted to the bathroom or commode.
- Use safe transfer and handling techniques, utilizing gait belt or assistive devices if needed.
• Use low beds and floor mats, if appropriate.
• Apply bed and chair alarms.
• Observe frequently or continuously, if necessary.
  (Gardner & Feil, 2013)

OCCUPATIONAL THERAPY INTERVENTIONS IN THE HOME ENVIRONMENT

The occupational therapist also works with clients and caregivers in the home setting, scanning their environment for hazards and evaluating the individual for limitations that contribute to falls.

Occupational therapists have a significant impact in preventing falls. OTs assess how the person functions in their day-to-day environment. They offer education in safety to patients and/or caregivers during activities of daily living. Structuring the environment and education can include:

• Removing environmental hazards
• Using proper body mechanics
• Wearing proper footwear
• Utilizing grab bars and tub-shower seats
• Increasing proximity of objects to avoid reaching
  (Lampiasi & Jacobs, 2010)

Preventing Medication Errors

OTs work in a variety of settings and address medication management as a part of the Occupational Therapy Practice Framework (AOTA, 2014). The framework addresses medication management as a part of health management and maintenance. OTs can implement a variety of strategies to enhance a patient’s adherence and understanding of their medications and medication routines as well as provide education on the various medications and conditions being treated by these medications.

Occupational therapists should always discuss any medication discrepancies with the appropriate interdisciplinary team member, specifically the nurse and physician. It is useful for OTs to remember the eight “rights” followed by nurses when administering drugs:

1. Right patient
2. Right medication
3. Right dose
4. Right route
5. Right time
6. Right documentation
7. Right reason for medication
8. Right response to the medication
Occupational therapists need to be knowledgeable about the medications their patients are taking, including indications and contraindications. They should have knowledge of pharmacology adequate to recognize when a patient is having a poor response to a medication, and they can play a vital role in making a referral to an appropriate practitioner when there is a change of condition or an emerging medical problem.

In general, an OT may discuss a medication with a patient, but interpretation of information about the medication is beyond the occupational therapy scope of practice. Occupational therapists should only discuss medication issues that are within their scope of practice and within their scope of knowledge.

As with other health professionals, OTs have a duty to question any order, including a medication order, which they believe is below the accepted standard of care or in violation of a hospital or employer policy or procedure. This includes drug or treatment orders that are illegible or unclear. OTs have a duty to request clarification from the physician or practitioner who is responsible for the order.

During each patient visit, OTs should complete a general assessment of the patient, looking for any change in medical condition, poor response to a treatment regimen, or the onset of a new medical problem. In some cases, an emerging medical problem may have been overlooked and vital medications withheld due to the lack of an appropriate diagnosis.

While occupational therapists in Florida do not prescribe or administer medications, they assist with successful and safe adherence by suggesting cues that remind people to take their medications as prescribed. Occupational therapists can help develop individualized medication routines, being mindful of a person’s unique needs and schedule (Sanders & Van Oss, 2013).

### COMMON MEDICATIONS IN REHAB SETTINGS

#### Pediatrics
- Antispasmodics
- Anti-seizure
- Cardiac
- Pain
- Chemotherapy medications

#### Geriatrics and Home Health
- Cardiac medications
- Antidepressants
- Narcotics
- OTC medications
- Alcohol
- Recreational drugs
- Anticoagulants
- Laxatives
- Stool softeners
ISSUES RELATED TO MEDICATIONS IN REHABILITATION-SPECIFIC SETTINGS

Common problems associated with medications in a variety of rehab settings are listed below.

**Pediatrics**
- Family education
- Pediatric dosing
- Communication deficiencies

**Geriatrics and Home Health**
- Under-medication and over-medication; geriatric dosing
- Loss of muscle mass and body fat, which can significantly alter the absorption and metabolism of medications
- Poor communication, affecting whether a medication is given or withheld
- Change of condition or transfer to a new setting, resulting in abrupt medication changes
- Polypharmacy, leading to adverse events such as falls
- Laxatives and stool softeners, affecting activity levels
- Alcohol and recreational drugs, causing balance problems, swallowing problems, and weakness
- Medications stopped or not taken as prescribed due to cost or inability to get to the pharmacy
- OTC medications mixed with prescription medications
- Anticholinesterase drugs causing fatigue, especially in people with disorders that affect muscle strength, such as post-polio syndrome

<table>
<thead>
<tr>
<th>Outpatient and Sports Medicine</th>
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</thead>
<tbody>
<tr>
<td>- Anti-inflammatories</td>
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<tr>
<td>- Narcotics</td>
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<tr>
<td>- Steroids</td>
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<tr>
<td>- Herbal medications</td>
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<tr>
<td>- Alcohol</td>
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<tr>
<td>- Recreational drugs</td>
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<tr>
<td>- Antidepressants</td>
</tr>
<tr>
<td>- Stimulants</td>
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<tr>
<td>- Human growth hormone</td>
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</tbody>
</table>

- Anticholinesterase drugs
- Cough medicines and expectorants
- Antihistamines
- Allergy and motion sickness drugs

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Outpatient and Sports Medicine

- Herbal medication interacting with prescribed medications
- Drug and alcohol abuse, recreational drugs
- Overuse of pain and anti-inflammatory medications
- Performance-enhancing drugs used by athletes, which can have a variety of physical effects
- Non-narcotic analgesics and OTC medications causing drowsiness, weakness, and fatigue and masking the effects of overtraining

DOCUMENTATION AND COMMUNICATION

Many errors have been demonstrated to arise from the lack of adequate or accurate communication. Meticulous medical documentation helps to prevent practice errors and provides a shield against errors arising from miscommunication.

Good Documentation

Documentation must be credible and timely and must accurately reflect the patient’s condition as well as the care given. Illegible writing, overuse of abbreviations, and poor transfer of information (both within a department and when a patient transfers to another department) can cause medical errors. Healthcare professionals must learn and follow their facility’s policies and procedures about charting.

DOCUMENTATION CHECKLIST

- Document in the correct chart.
- Document any prevention measures, including patient education.
- Write legibly, using agency-approved abbreviations.
- Be objective, state the facts, and avoid personal opinions.
- If a problem is identified, document the actions taken to address the problem.
- Document all communication with colleagues.
- Document errors and how they were dealt with.
- Document referrals to other health practitioners or services.
- Follow agency procedures for correcting a charting error.
- Never document what someone else saw or heard unless the information is critical.
In addition, an occupational therapist should:

- Document in a manner that is concise, accurate, complete, and reflective of the assessment.
- Document sources and methods used to gather evidence-based practice information.
- Retain raw data obtained by utilizing standardized assessment tools.
- Document rationale for interventions and intervention plans which keep patient’s discharge in focus.
- Document client performance in the OT process of evaluation, intervention, and outcomes.
- Ensure accuracy of documentation.

CASE

Leslie, an occupational therapist, regularly treats patients at a local nursing home that has been cited several times in the past for substandard care. One day in August the temperature outside hit a record 112 ºF, and the air conditioning malfunctioned in the dayroom, the area where residents gather for lunch each day. As she assisted a patient with dementia to the dayroom for lunch, Leslie saw that some residents were slumped over, red-faced and sweating. She mentioned the broken air conditioner and the heat to her rehab director and suggested that the residents could remain in their air-conditioned rooms and have their lunch served there. The rehab director told her to speak to the charge nurse.

Leslie approached the charge nurse and made the same request but was told that it was too late to make such a change as the lunch trays were already arriving. Anyway, the nurse added, the air conditioner was to be repaired in the afternoon.

Worried about the residents’ well being, Leslie gathered a few fans from around the facility with the help of a nurse assistant and placed them in the dayroom to try to cool the residents. Feeling confident that the residents were now out of danger, she left for lunch. When she returned, the facility administrator stopped her in the hallway and said that the charge nurse had made a complaint against her for “stealing fans” and for “interfering,” saying that “she should leave such decisions in the future to the nursing staff.”

When Leslie returned to the therapy room, her supervisor said, “I’m sorry, but you shouldn’t have taken the fans. This is the second time you’ve complained about a patient care issue, and the administrator thinks you’re not a team player. You know how difficult she can be.”

Discussion

Leslie was correct to raise her concerns with her supervisor, as patient safety is part of an occupational therapist’s responsibilities, and this situation could easily lead to an adverse event. The charge nurse’s response and the administrator’s actions indicate a system breakdown,
given their failure to respond to a situation that could lead to an adverse event. Their attitudes and actions also contribute to a culture of blame instead of a culture of safety.

Leslie’s responsibilities include clearly documenting the incident and her efforts to report it and how she addressed it. She would also be prudent to create a personal copy of her report in the event she is called in the future to testify by state authorities. She should contact the nursing home’s Long-term Care Ombudsman as well as the Department of Elder Care’s complaint hotline to file a complaint.

CONCLUSION

For over a decade, patient safety has become a topic of national concern. Everyone has a stake in the safety of the healthcare system—healthcare workers as well as the general public. In the past, patient safety and quality have not been a traditional part of the education of most healthcare workers, but today this is no longer an acceptable reason for not taking an active role in the prevention of negative outcomes for those we care for. It is essential that we all understand the journey every patient makes through the system, recognizing how the system can fail and what can be done to prevent those failures.

To counter errors and safeguard patients, changes must continue to be made in how the workforce is deployed, how work processes are designed, and to leadership, management, and the culture of healthcare organizations. Physicians, nurses, therapists, and other healthcare personnel are members of a team, and it is crucial that these team members work together and communicate effectively. Collaborative teamwork is essential for optimizing quality and safety in healthcare.

RESOURCES

AHRQ Patient Safety Network
http://psnet.ahrq.gov

Florida Agency for Health Care Administration, Division of Health Quality Assurance
http://ahca.myflorida.com/MCHQ/index.shtml#1

Health Care at the Crossroads: Strategies for Improving the Medical Liability System and Preventing Client Injury (Joint Commission)
http://www.jointcommission.org/assets/1/18/Medical_Liability.pdf

Hospital Safety Score
http://www.hospitalsafetyscore.org
Institute for Healthcare Improvement
http://www.ihi.org

NCCMERP (National Coordinating Council for Medication Error Reporting and Prevention)
http://www.nccmerp.org

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

National Quality Forum
http://www.qualityforum.org

REFERENCES


Wyatt RM. (2014). Don’t make me wait! Retrieved http://www.jointcommission.org/jc_physician_blog/dont_make_me_wait/
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TEST

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1. An adverse event is defined as:
   a. The use of the wrong plan to achieve a certain aim.
   b. The failure of a planned action to be completed as intended.
   c. A failure to solve problems of practice, procedures, or systems and to make appropriate changes.
   d. An injury caused by medical management rather than the underlying condition of the patient.

2. According to the Joint Commission, a sentinel event is defined as any:
   a. Unexpected occurrence involving death or serious physical or psychological injury.
   b. Error in system design, faulty installation or maintenance of equipment, or ineffective organizational infrastructure.
   c. Meeting to reduce health risks and brainstorm a corrective action plan.
   d. Error that could have caused harm but did not because someone intervened.

3. Which is an example of a near miss?
   a. An undetected design flaw in a medical device leads to a patient injury.
   b. An incorrect physician prescription is discovered and changed prior to patient care.
   c. A dead battery on an automatic external defibrillator causes a delay of treatment and death.
   d. The improper marking of a surgical site leads to wrongful amputation of the patient’s foot.

4. The National Quality Forum’s Serious Reportable Events (SREs) in healthcare are also known as:
   a. Sentinel events.
   b. Never events.
   c. Adverse events.
   d. Latent events.
5. A nurse floating to another unit begins preparing a continuous IV heparin infusion. Microdrip and macrodrip tubing are stored in bins next to each other on the supply cart. The placement of the bins on the supply cart is different from the unit in which the nurse normally works. The nurse mistakenly uses the macrodrip instead of the microdrip tubing, resulting in a drug overdose to the patient. This scenario is described as:
   a. An unexpected and patient-related error causing an adverse event.
   b. A sentinel error causing an adverse event.
   c. A near miss causing an adverse event.
   d. A latent and active error causing an adverse event.

6. The most common root cause of medical errors is:
   a. Inadequate staff or supervision.
   b. Technical failures of equipment.
   c. Problems involving communication.
   d. Deficiencies in education and training.

7. What is the more common cause of patient deaths?
   a. COPD
   b. Motor vehicle accidents
   c. Medical errors
   d. Stroke

8. The most common cognitive (reasoning) error that practitioners make is:
   a. Failure to make referrals.
   b. Premature closure of the diagnostic process.
   d. Inadequately staffing the healthcare facility.

9. Most medication errors occur when drugs are:
   a. Administered.
   b. Prescribed.
   c. Dispensed.
   d. Discontinued.
10. Which is a correct statement concerning tubing misconnections?
   a. IV tubing cannot be connected to a nasogastric tube.
   b. Staff fatigue is not a factor related to misconnections.
   c. Enteral feeding tube connections have unique connectors.
   d. Luer locks are a major contributor to errors.

11. Which is a true statement regarding practice errors in rehabilitation therapy?
   a. Communication with other professionals is not a cause for errors.
   b. Most errors occur in the planning phase of treatment.
   c. Errors have been attributed to inexperience.
   d. Errors are more common in therapy settings than other healthcare settings.

12. An 85-year-old retired physician is scheduled for a hernia repair. Which characteristic unique to the patient could potentially contribute to a medication error?
   a. Limited health literacy
   b. Anxiety about surgery
   c. Slowed metabolism
   d. Alcoholism

13. Which characteristic of children puts them at risk for adverse medical events?
   a. Cognitive impairment
   b. Changing pharmacokinetic parameters
   c. Frequent falling
   d. Hyperactivity

14. Root cause analysis is:
   a. A process for discovering basic and contributing causes of error with the continuing goal of preventing recurrence.
   c. An exploration of all adverse incidents and malpractice actions at a facility.
   d. A way of distinguishing injuries caused by medical management from all other injuries to patients.
15. Medicare and Medicaid do not reimburse for which preventable complication arising during an inpatient stay?
   a. Viral pneumonia
   b. Falls
   c. Tenosynovitis
   d. Any stage pressure ulcer

16. In Florida, reporting of sentinel events is:
   a. Voluntary.
   b. Mandatory.
   c. Recommended.
   d. Not required.

17. Florida statutes require Code 15 reports to be submitted within what time period after an incident’s occurrence?
   a. 48 hours
   b. 3 days
   c. 7 business days
   d. 15 calendar days

18. An older adult female patient is admitted to the hospital with a right arm fracture following a fall while rising from her wheelchair. After conducting a falls assessment, the clinician determines the patient is at high risk for another fall. Which intervention is appropriate to include in the patient’s care plan?
   a. Applying bed and chair alarms
   b. Keeping the head of the bed slightly elevated
   c. Toileting every four hours while awake
   d. Providing a night light for ambulation