Prevention of Medical Errors

LEARNING OBJECTIVES

- Define medical error, adverse event, side effects, close calls or near miss, never event, and sentinel event.
- Identify the classifications of human errors.
- Identify the impact of medical errors on the healthcare field.
- List factors that increase the risk of medical errors.
- Identify populations of special vulnerability.
- Determine responsibilities for reporting medical errors.
- Identify processes for improving client outcomes.
- Identify public education measures related to client safety.

Introduction:

In the United States there is a hidden epidemic of medical errors. This epidemic has a result of injury in every 25 hospital clients and tens of thousands of death each year. (IOM, 1999). Medical errors are more deadly than breast cancer, motor vehicle accidents, or AIDS. To Err Is Human made headlines across the country, with anticipated consequences on the national agenda. From local hospitals and clinics to state and federal agencies, medical errors became a priority.

It has been over 15 years 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 poor hospital care contributed to the deaths of 180,000 patients in Medicare alone in a given year (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 and cancer. 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 economics of health care quality and medical errors.

Hospitals have been looking for ways to improve quality and operational efficiency and cut costs for nearly three decades, using a variety of quality improvement strategies. However, based on recent reports, approximately 200,000 Americans die from preventable medical errors including facility-acquired conditions and millions may experience errors. In 2008, medical errors cost the United States $19.5 billion. About 87 percent or $17 billion were directly associated with additional medical cost, including: ancillary services, prescription drug services, and inpatient and outpatient care, according to a study sponsored by the Society for Actuaries and conducted by Milliman in 2010. Additional costs of $1.4 billion were attributed to increased mortality rates with $1.1 billion or 10 million days of lost productivity from missed work based on short-term disability claims. The authors estimate that the economic impact is much higher, perhaps nearly $1 trillion annually when quality-adjusted life years (QALYs) are applied to those that die. Using the Institute of Medicine’s (IOM) estimate of 98,000 deaths due to preventable medical errors annually in its 1998 report, To Err Is Human, and an average of ten lost years of life at $75,000 to $100,000 per year, there is a loss of $73.5 billion to $98 billion in QALYs for those deaths—conservatively. These numbers are much greater than those cite from studies that explore the direct costs of medical errors. And if the estimate of a recent Health Affairs article is correct-preventable death being ten times the IOM estimate-the cost is $735 billion to $980 billion. Quality care is less expensive care. It is better, more efficient, and by definition, less wasteful. It is the right care, at the right time, every time. It should mean that far fewer patients are harmed or injured. Quality care is not being delivered consistently throughout U.S. hospitals. Whatever the measure, poor quality is costing payers and society a great
deal. However, health care leaders and professionals are focusing on quality and patient safety in ways they never have before because the economics of quality have changed substantially.

Definitions:

Medical Error: The Institute of Medicine defines a medical 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).” Errors can include problems in practice, products, procedures, and systems.

Adverse Effect: An adverse effect is an undesired harmful effect resulting from a medication or other intervention such as surgery.

Side Effect: A side effect is an effect, whether therapeutic or adverse, that is secondary to the one intended; although the term is predominantly employed to describe adverse effects, it can also apply to beneficial, but unintended, consequences of the use of a drug.

Close Call/Near Miss: “Close calls or 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 interfered.

Never Event: A Never event are errors that should never happen. The National Quality Forum identifies these as Serious Reportable Events (SREs) and groups them into the following categories: Surgical • Product/device • Patient protective • Care management • Environmental • Radiological • Criminal

Sentinel Event: Sentinel events are defined as “an unexpected occurrence involving death or serious physiological 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 (JCAHO).

Classification of Errors
Researchers have identified two types of errors humans make (Reason, 1990): active and latent. Active errors usually arise at the level of the individual, and their effects are most likely felt instantly. Latent errors are more likely to be beyond the control of the individual. Most likely they are errors in system design, faulty installation or maintenance of equipment, or ineffective organizational structure. The effects of latent errors may not materialize for months or even years but they can eventually lead to a cascade of active errors, resulting in fatality.

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
A study of hospitals in Colorado and Utah found that surgical adverse events accounted for two-thirds of all adverse events and 1 of 8 hospital deaths (Gawande et al., 1999).

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 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.

The Joint Commission on Accreditation of Healthcare Organizations (JCAHO) found that wrong-site surgery was most common in orthopedic procedures. A review of the contributing factors resulting in 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.

Due to the number of surgical errors, such as wrong site, wrong-procedure, or wrong-person surgery, JCAHO established a Universal Protocol, which all accredited healthcare organizations were required to implement by July 2004 (JCAHO, 2004) hoping to reduce the risk of wrong-site, wrong-procedure, or wrong-person surgeries. These types of surgical errors are not the sole liability of the operating surgeon but also the operating room personnel. Everyone must ensure client safety by verifying the surgical site and pointing out a possible error.
Competent nursing care following surgical procedures is crucial. In a study of Pennsylvania hospitals, it showed the risk of client death following common surgical procedures was 30% higher in hospitals where nurses’ mean workloads were eight clients or more each shift than in hospitals where nurses cared for four or fewer clients (Aiken et al., 2002). A later study in Pennsylvania found that hospitals with higher proportions of nurses educated at the baccalaureate level or higher had lower rates of postoperative mortality and failure-to-rescue (deaths of clients with serious complications) (Aiken et al., 2003).

**Diagnostic Inaccuracies**

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.

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 communication problems and information gaps.

**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 also occur 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 common that a lot of symptoms patients present with are vague, such as fatigue, tired or feeling weak, 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).

Errors in diagnosing 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).

A proper diagnosis is imperative for correct and effective treatment.

An inaccurate diagnosis may delay treatment or result in incorrect, ineffective treatment which can lead to costly, invasive, and unnecessary tests. Inexperience with a difficult diagnostic procedure can affect the accuracy of the results.

According to JCAHO (2002) misdiagnosis is a major factor contributing to delays in treatment. Hospital emergency departments were responsible for just over one-half of all sentinel-event cases of patient death or permanent injury due to delays in treatment. Please note that these serious events can take place in other healthcare settings, including intensive-care units, medical-surgical units, inpatient psychiatric hospitals, the operating room, and the home care setting. In this report, 52 out of the 55 reported cases of delays in treatment resulted in client death.

**Medication Errors**

Medication errors are one of the most common types of error, and are of the utmost concern to the nurses who administer them, the practitioners who prescribe them, and to the pharmacists who dispense them. Medication errors are called preventable ADEs. According to *U.S. Pharmacopeia (USP)*, MEDMARX, the largest nongovernmental database of medication errors, has received more than 1 million medication error records since the program’s introduction in 1998. About half of the reported errors reached the client; however, 98% resulted in no harm (USP, 2005).

Researchers from AHRQ and the National Center for Health Statistics, ADEs accounted for an estimated 4.3 million physician visits in the United States during 2001, up from 2.7 million such visits in 1995. Women 65 to 74
years of age had the highest incidence of ADEs (Zhan et al., 2005).

On July 1, 2003 Florida passed law 456.42, F.S, which requires physicians in Florida to either print legibly or type prescriptions and to include the name and strength of the drug prescribed, the quantity of the drug prescribed in both textual and numerical formats, and the directions for taking the drug.

The state also:

- Requires physicians to read each prescription to the client so they know what it says in case the pharmacist asks.
- Requires the physician to check if the client has allergies and document on the prescription.
- Requires physicians, who write illegible prescriptions, be reported to their licensing board.
- Requires physicians in Florida to either print legibly or type prescriptions.

These requirements help to improve client safety and reduce the risk for medical errors.

The *U.S. Pharmacopeia* (USP, 2000) reported 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

According to USP's frequently asked questions (2005):

- The primary contributing factors to medication errors were distractions, workload increases, and staffing issues such as inexperienced or temporary staff and insufficient staffing. Many of these factors may have resulted from efforts at cost containment.
- Insulin, heparin, warfarin, and albuterol were the medications most often associated with errors.

Computerized prescriber order entry (CPOE) is aiding many hospitals to reduce ADEs but it has not eliminated medication errors. The USP reported that nearly 20% of hospital and health system medication errors reported to MEDMARX in 2003 involved computerization or automation (such as automated dispensing devices used in client care areas of more than half of U.S. hospitals). Nearly half of all CPOE errors were dosing errors (extra dose, wrong dose, or omission). Because of computerization, however, only 1.3% of those errors resulted in client harm (USP, 2004).

Client-controlled analgesia (PCA) pumps can also result in medication errors, more than tripling the risk of client harm. According to the USP, the most common types of error involving PCA pumps were improper dose/quantity, unauthorized/wrong drug, and dose omission. Despite the built-in safety features of PCA pumps—including a lockout interval that sets a minimum time between each dose and a maximum allowable dose during a specified time period—medication errors involving these pumps continue (USP-CAPS, 2004). USP recommendations for preventing errors with PCA pumps are included on the following page:

PREVENTING ERRORS IN CLIENT-CONTROLLED ANALGESIA

1. Include bar codes on all PCA medications in facilities where point-of-care bar code systems or other item identification technology (e.g., radio frequency identification) are implemented.
2. Conduct a failure modes and effects analysis (FMEA) for existing pumps, as well as for new pumps that are brought into the facility. Consider what default settings are preprogrammed. Consider if the pumps can be programmed by drug (e.g. morphine PCA vs. hydromorphone PCA). Consider if the pump resets to a default (other than “000,” which would require active entry) after it turns off.
3. Perform double-checks for initial setup and maintenance, and dose changes/change orders. Double-check clamp (to open position) before closing the pump. Check that the pump is turned on. Check whether connections are to IV or epidural lines to prevent wrong-route errors. Check for kinked tubing in the pump door.
4. Educate staff about sound-
alike and look-alike drugs, especially when bar code technology is not part of the existing system. Many drug errors with PCA pumps are due to name confusion (eg, morphine, hydromorphone, meperidine).

5. If using preprinted order forms, prohibit writing over information on the form.

6. Educate clients, family members, and staff (including physical therapists, x-ray technicians) about the use of the pumps. Written instructions should be provided to clients. Instruct family members NOT to administer PCA doses—PCA by definition should be administered at the client’s perception of need. Document education of client and family members.


High-risk drugs such as neuromuscular blocking agents, chemotherapy agents (some of which are carcinogens), and opioid analgesics must have special precautions to prevent fatal errors. Although many of these drugs carry a black box warning (BBW), the FDA's strongest labeling requirement, one recent study points out that some physicians and pharmacists may ignore BBWs in prescribing and dispensing drugs (Wagner et al., 2005).

Listed below are the recommendations from The Institute for Safe Medical Practices to prevent catastrophic errors with neuromuscular blocking agents:

- Limit access. When possible, dispense neuromuscular blocking agents from the pharmacy as prescribed for clients. Allow floor stock of these agents only in the OR, ED, and critical care units where clients can be properly ventilated and monitored.
- Segregate storage. When these agents must be available as floor stock, have the pharmacy assemble the vials in a sealed box with warnings affixed as noted below. Sequester the boxes in both refrigerated and nonrefrigerated locations.
- Warning labels. Affix fluorescent red labels that note: “Warning: Paralyzing Agent—Causes Respiratory Arrest” on each vial, syringe, bag, and storage box of neuromuscular blocking agents. Commercially available labels can be purchased from United Ad Label Co. Call 1-800-992-5755 and order item #AM282. (ISMP, 2005)

Even though nurses do not write the prescription or dispense the drug from the pharmacy, they play a huge role in recognizing possible errors when certain drugs are prescribed and dispensed. Nurses who administer medication should always remember these following six “rights”:

- Right Client
- Right drug
- Right Dose
- Right Dosage Form
- Right Route

- Right Time

In 1999, The National Client Safety Partnership, a coalition of healthcare organizations, released a list of best practices in medication safety. If hospitals implemented all of these practices, it could markedly reduce medication errors.

BEST PRACTICES FOR MEDICATION SAFETY

To reduce the occurrence of adverse drug events (ADEs—events that can cause, or lead to, inappropriate medication use and client harm):

Clients can help by:

- Telling physicians about all medications they are taking and responses/reactions to them.
- Telling physicians about any change in their health since the previous visit.
- Asking for information in terms they understand before accepting medications.
- Insisting that the physician include the purpose of the medication on the prescription.
- Checking to be sure a refill is what it’s supposed to be.

Providing organizations and practitioners can help by:

- Educating clients.
- Putting allergies and medications on client records.
- Stressing dose adjustment in children and older persons.
- Limiting access to high-hazard drugs.
- Using protocols for high-hazard drugs.
- Computerizing drug order entry.
- Using pharmacy-based IV and drug mixing programs.
- Avoiding abbreviations.
- Standardizing drug packaging, labeling, & storage.
- Using "unit dose" drug systems (packaged and labeled in standard client doses).

Purchasers can help by:

- Requiring machine-readable labeling (barcoding).
- Buying drugs with prominent display of name, strength, warnings.
- Buying "unit of use" packaging ("unit dose").
- Buying IV solutions with two-sided labeling.

Clients should always ask the following questions before accepting prescription drugs in order to prevent a potential hazard by taking a medication that was not prescribed for them or cannot be safely taken by them

- Is this the drug my doctor (or other healthcare provider) ordered? What is the trade and generic name of the medication?
- What is the drug for? What is it supposed to do?
- How and when am I supposed to take it and for how long?
- What are the likely side effects? What do I do if they occur?
- Is this medication safe to take with other over-the-counter or prescription medications, or dietary supplements, that I am already taking? What food, drink, activities, dietary supplements or other medication should be avoided while taking this medication?


**System Failures**

Analysis of medical errors continues to show that human fallibility is only part of the picture. System failures are also guilty. In a major study, Leape and colleagues (1995) showed that failures at the system level—in publicizing pharmaceutical information, in checking drug dosages and client identities, and in making client information available—were the real culprits in more than 75% of adverse drug events.

Cost containment is a system-level factor that can affect medical errors. Researchers at AHRQ believe financial pressure at hospitals is associated with increases in the rate of adverse events. The Healthcare Cost and Utilization Project (HCUP) State Inpatient Data for Florida found that clients have significantly higher odds of experiencing AEs when hospital profit margins decline over time. These include nursing-related AEs, surgery-related AEs, and all likely preventable AEs (Encinosa-Bernard, 2005).

Research on system failures, (Peterson, 1996) which have caused major industrial disasters found that the systems had nine characteristics in common:

1. Diffuse responsibilities
2. Underestimation of the severity of risks

Healthcare systems with these characteristics constitute an unsafe environment for both clients and staff.

**FACTORS THAT INCREASE THE RISK OF ERRORS**

“To err is human” according to the IOM but there are certain factors that can definitely increase the error rate (Reason, 1990)

- **Fatigue.** Working a double shift, for example, can increase the likelihood of errors. Medical residents on call for 24 hours or more are also at high risk for errors. Research shows how such system-based changes as reducing the work hours of medical personnel can reduce the error rate in hospitals (Landrigan et al., 2004).

- **Alcohol and/or other drugs.** Use of alcohol and/or drugs is incompatible with competent, professional, safe client care. Unfortunately, the combination of high stress and easy access to medications has led to
handwriting has long been criticized for its illegibility, particularly on prescriptions. Fortunately, computerized medication ordering has eliminated this problem in many healthcare organizations.

- **Unsafe working conditions.** Poor lighting and/or slippery floors can lead to errors, especially falls—a costly hazard in every hospital.

**POPULATIONS OF SPECIAL VULNERABILITY**

The safety of all clients is of huge concern for all care providers. However, some clients are more susceptible to the effects of medical errors, often due to their inability to participate actively as a member of the healthcare team, most commonly related to communication issues. Nurses and other health care providers need to recognize the special needs of these clients and handle each case accordingly.

**Older Clients**

The normal aging process commonly includes some degree of impairment in vision and hearing. Older people may also suffer varying degrees of cognitive impairment. Alone or in combination, these problems contribute to difficulties in communication between clients and care providers. Serious illness, accidents, or trauma such as surgery that require hospitalization add anxiety and possible confusion that can further interfere with communication between clients and care providers, potentially leading to errors.

Older clients are at special risk from medication errors, which 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 clients, communication with a responsible family member or other client advocate is essential.

Older clients are also at high risk of falling. Reasons include medication effects, existing health problems such as arthritis, confusion or other cognitive deficit, or postural hypotension.

**Infants and Children**

The younger the client, the greater the risk of serious medication errors with devastating effects. Weight-based dosing is required for almost all pediatric drugs, and errors often occur when physicians or pharmacists convert dosage from pounds (for adults) to kilograms (for children). The USP advises that parents should know their child’s weight in kilograms and reconfirm with the doctor that the dosage is correct for that weight.

Infants and young children do not have the communication skills needed to alert clinicians about adverse effects that they experience. Infants, particularly newborns, are physiologically ill-equipped to deal with drug errors. Parents of infants and children need to be fully informed and involved in their child’s care during hospitalization and must be educated to question caregivers about medications and procedures.

**Intensive Care Units**

Intensive care units (ICUs) host the sickest clients, which makes them more vulnerable to medical errors and more prone to injury. The AHRQ researchers reported that
more than 20% of clients admitted to two ICUs at a teaching hospital experienced an AE, almost half of which were preventable. A significant number of the AEs involved medication errors, most commonly a wrong-dose error. Most of the AEs occurred during routine care, not at admission or during an emergency (AHRQ, 2005b).

**Language Skills or Literacy**

In Florida, there is a diverse population, both culturally and ethnically. Meeting the healthcare needs of these people can be quite challenging. They may require bilingual care providers, translators or interpreters, or other communication experts. Without these experts available, communication of vital information between client and provider can lead to misunderstanding and errors. Fortunately, many hospitals have translators or interpreters available for clients who do not speak English.

General guidelines to assist nurses caring for clients from thirty-five different cultural groups can be found in *Culture and Nursing Care: A Pocket Guide* (Lipson, Dibble & Minarik, 2005). Each chapter outlines issues related to health and illness, symptom expression, self-care, birth, death, religion, family participation in care, and other topics.

When caring for clients whose verbal abilities are limited either by education, development, or a neurologic impairment, assistive devices such as an alphabet board, a picture board, or a magic slate may prove helpful. Clients who are unable to speak because of a tracheostomy or other surgical procedure should also have these devices available, along with pencil and paper (Adkins, 1991).

**Fall Risk**

Falls are a commonly reported sentinel event, and often times can be fatal. They not only affect older patients but also a patient who has had excessive blood loss and/or maternity patients who may have had an epidural and experience decreased lower body sensation. Factors that increase the risk of falls are summarized on the following below:

**RISK FACTORS FOR FALLS**

Special risk factors for falls include:

- Age 65 or over
- History of falling
- Impaired mobility or difficulty walking
- Need for assistance in getting out of bed or transferring to/from chair
- History of dizziness or seizures
- Impaired vision, hearing, or speech
- Need for mobility-assistive devices (cane, walker, wheelchair, crutches or braces)
- Weakness or fatigue
- Confusion, disorientation, impaired cognitive function
- Use of medications such as diuretics, laxatives, or consciousness-altering drugs including sedatives, analgesics, hypnotics, antidepressants, tranquilizers.

Source: Harkreader, 2005.

In order to improve client safety, it begins with prompt reporting of errors, followed by analysis of the root causes and contributing factors and the development and execution of a plan of action to prevent similar errors in the future. This is the only way for healthcare organizations to gauge the safety of care delivered and determine whether safety is improving.

The attitude in the healthcare industry that errors are solely the responsibility of individual practitioners has proved a major barrier to reporting. Instead of analyzing the multiple factors that contribute to errors, efforts have focused almost entirely on making providers more careful, reinforced by fear of punishment when they fail. Until the mid-1990s, this punitive attitude severely limited the reporting of errors. In fact, research shows that when the fear of punishment is removed, reporting of errors increases by as much as ten- to twenty-fold (Leape, 2000).

**Joint Commission on Accreditation of Healthcare Organizations**

All accredited healthcare organizations are required to have two systems for reporting errors: an internal system and an external system. JCAHO, whose mission is "to continuously improve the safety and quality of care provided to the public," 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.

A sentinel event, according to JCAHO, is any unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof. Including the words “or the risk thereof” broadens the definition to include potential sentinel events (close calls/near misses). The following page explains examples of reportable JCAHO sentinel events.

**JCAHO REPORTABLE SENTINEL EVENTS**

The Joint Commission encourages, but does not require, reporting of any sentinel event meeting the criteria below.

Unanticipated death or major permanent loss of function, unrelated to the natural course of the client’s illness or underlying condition, or one of the following (even if the outcome was not death or major permanent loss of function unrelated to the natural course of the client’s illness or underlying condition):

- Suicide of any individual receiving care, treatment, or services in a staffed around-the-clock care setting or within 72 hours of discharge
- Unanticipated death of a full-term infant
- Abduction of any individual receiving care, treatment, or services
- Discharge of an infant to the wrong family
- Rape
- Hemolytic transfusion reaction involving administration of blood or blood products having major blood group incompatibilities
- Surgery on the wrong individual or wrong body part
- Unintended retention of a foreign object in an individual after surgery or other procedure
- Severe neonatal hyperbilirubinemia (bilirubin >30 milligrams/deciliter)
- Prolonged fluoroscopy with cumulative dose >1500 rads to a single field, or any delivery of radiotherapy to the wrong body region or >25% above the planned radiotherapy dose

All accredited facilities are required to report not only actual but also potential sentinel events, the close calls and near misses that afford valuable learning opportunities for prevention of future errors. Once sentinel events are reported, the JCAHO requires facilities to submit the findings of their root cause analysis and corrective action plans. This information can be included in JCAHO’s review of sentinel events, helping track national trends and develop strategies for improving client safety. JCAHO states:

“If the submitted root cause analysis or action plan is not acceptable or none is submitted within 45 days, the organization is at risk for being placed on Accreditation Watch by the Accreditation Committee of the Joint Commissioners. Accreditation Watch is a publicly disclosable attribute of an organization’s existing accreditation status and signifies that the organization is under close monitoring by the Joint Commission. The Accreditation Watch status is removed once the organization completes and submits an acceptable root cause analysis.

Failure to perform an acceptable root cause analysis and implement appropriate actions can result in a change in accreditation status, including loss of accreditation.” (JCAHO, 2005)

Since 1995 JCAHO has reviewed 3,197 sentinel events. The most common sentinel events are client suicide, operative/postoperative complications, wrong-site surgery, and medication errors. Accredited organizations are expected to:

- Review and consider relevant information, if appropriate to the organization’s services, from each Sentinel Event Alert.
- Consider information in an alert when designing or redesigning relevant processes.
- Evaluate systems in light of information in an alert.
- Consider standard-specific concerns.
- Implement relevant suggestions or reasonable alternatives or provide a reasonable explanation for not implementing relevant changes.

**FLORIDA LAW**

In most states reporting sentinel events to JCAHO is voluntary. 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 Healthcare 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.

Statute 395.0197 mandates internal reporting of any adverse incident (event) "over which healthcare 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:

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 client has not given his or her informed consent, or
   * Any condition that required the transfer of the client, within or outside the facility, to a unit providing a more acute level of care due to the adverse incident, rather than the client's condition prior to the adverse incident;

2. Was the performance of a surgical procedure on the wrong client, a wrong surgical procedure, a wrong-side surgical procedure, or a surgical procedure otherwise unrelated to the client's diagnosis or medical condition

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

4. Was a procedure to remove unplanned foreign objects remaining from a surgical procedure. (F.S.395.0197)

The risk-management reporting system must:

- Investigate and analyze the frequency and causes of adverse incidents to clients
- Educate facility staff and agents
- Analyze client grievances related to client care

All incident reports must be filed with the risk manager of the healthcare organization or his or her designee within three days after the event occurred. Following receipt of the report, the risk manager in turn must report the event to the Florida Agency for Healthcare Administration.

In addition to their internal reporting system, Florida hospitals and ambulatory surgical centers also must submit two types of reports to the Florida AHCA:

1. A Code 15 reports which reports in detail on each serious client injury, the facility's investigation of the injury, and whether the factors causing or resulting in the adverse incident represent a potential risk to other clients. The findings of that investigation must be reported to AHCA within 15 days of an adverse incident. Failure to comply with this mandate may result in fines of as much as $25,000.

2. The annual report, which includes all adverse incidents that occur in the facility and malpractice actions (new, pending, and closed) in the course of a calendar year. Facilities are also required to report any injuries of which they are aware that occur through any healthcare service, including nursing homes, home health organizations, doctors' offices, dentists' offices, or any other purveyor of healthcare service. Florida Statute 641.55 requires similar reporting of client injury incidents by HMOs. These reports are due after the first of each year for the previous year.
**IMPROVING CLIENT OUTCOMES**

**Root Cause Analysis (RCA)**

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.

A root cause analysis (RCA) and corrective action plan are required by JCAHO for each reported sentinel event within 45 days of the event's occurrence or of the organization's becoming aware of the event. JCAHO research shows the leading root causes of sentinel events between 1996 and 2004 were communication, orientation/training, client assessment, and staffing. The U.S. Department of Veterans Affairs, National Center for Client Safety, offers the following guidance.

The goal of a root cause analysis (RCA) is to find out:

- 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 of 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 **thorough**, an RCA must include:

- Determination of human and other factors
- Determination of related processes and systems
- Analysis of underlying cause and effect systems through a series of why questions
- Identification of risks and their potential contributions
- Determination of potential improvement in processes or systems

To be **credible**, an 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. (U.S. Dept. Veterans Affairs, 2005)

Electronic medical records (EMRs) and other technological information can improve communication and client safety if fully implemented in hospitals and other healthcare facilities. For example, EMRs can help reduce medication errors, avoid the need to repeat laboratory tests, and improve continuity of care across the healthcare system. All healthcare providers within a system have access to accurate and complete information when they need it.

Many healthcare organizations find the cost of EMRs a deterrent. According to the Leapfrog Group, a national coalition of large healthcare providers, a purchase and implementation of EMRs in a 200-bed hospital can cost from $1 to $7 million. However, the return on investment in terms of increased efficiency and improved client safety can be substantial (Joint Commission, 2005).

The JCAHO issued new mandatory goals and recommendations to improve client safety which took effect in January 2006. 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. The 2006 National Client Safety Goals and Recommendations are summarized below. New goals are in boldface type.

**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, which 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
2015 JCAHO NATIONAL SAFETY GOALS

Hospital National Patient Safety Goals: The purpose of the National Patient Safety Goals is to improve patient safety. The goals focus on problems in health care safety and how to solve them.

Goal 1.

Improve the accuracy of client identification.

1. Use at least two patient identifiers when administering medications, blood, or blood components; when collecting blood samples and other specimens for clinical testing; and when providing treatments or procedures. The patient’s room number or physical location is not used as an identifier.

2. Label containers used for blood and other specimens in the presence of the patient.

Eliminate transfusion errors related to patient misidentification.

1. Before initiating a blood or blood component transfusion: - Match the blood or blood component to the order. - Match the patient to the blood or blood component. - Use a two-person verification process or a one-person verification process accompanied by automated identification technology, such as bar coding.

2. When using a two-person verification process, one individual conducting the identification verification is the qualified transfusionist who will administer the blood or blood component to the patient.

3. When using a two-person verification process, the second individual conducting the identification verification is qualified to participate in the process, as determined by the hospital.

Goal 2.

Improve the effectiveness of communication among caregivers.

Report critical results of tests and diagnostic procedures on a timely basis.

1. Develop written procedures for managing the critical results of tests and diagnostic procedures that address the following: - The definition of critical results of tests and diagnostic procedures - By whom and to whom critical results of tests and diagnostic procedures are reported - The acceptable length of time between the availability and reporting of critical results of tests and diagnostic procedures.

2. Implement the procedures for managing the critical results of tests and diagnostic procedures.

3. Evaluate the timeliness of reporting the critical results of tests and diagnostic procedures.

Goal 3.

Improve the safety of using medications.

Label all medications, medication containers, and other solutions on and off the sterile field in perioperative and other procedural settings. Note: Medication containers include syringes, medicine cups, and basins.

1. In perioperative and other procedural settings both on and off the sterile field, label medications and solutions that are not immediately administered. This applies even if there is only one medication being used. Note: An immediately administered medication is one that an authorized staff member prepares or obtains, takes directly to a patient, and administers to that patient without any break in the process. Refer to NPSG.03.04.01, EP 5, for information on timing of labeling.

2. In perioperative and other procedural settings both on and off the sterile field, labeling occurs when any medication or solution is transferred from the original packaging to another container.

3. In perioperative and other procedural settings both on and off the sterile field, medication or solution labels include the following: - Medication or solution name - Strength - Amount of medication or solution containing medication (if not apparent from the container) - Diluent name and volume (if not apparent from the container) - Expiration date when not used within
24 hours - Expiration time when expiration occurs in less than 24 hours Note: The date and time are not necessary for short procedures, as defined by the hospital.

4. Verify all medication or solution labels both verbally and visually. Verification is done by two individuals qualified to participate in the procedure whenever the person preparing the medication or solution is not the person who will be administering it.

5. Label each medication or solution as soon as it is prepared, unless it is immediately administered. Note: An immediately administered medication is one that an authorized staff member prepares or obtains, takes directly to a patient, and administers to that patient without any break in the process.

6. Immediately discard any medication or solution found unlabeled.

7. Remove all labeled containers on the sterile field and discard their contents at the conclusion of the procedure. Note: This does not apply to multiuse vials that are handled according to infection control practices.

8. All medications and solutions both on and off the sterile field and their labels are reviewed by entering and exiting staff responsible for the management of medications.

Reduce the likelihood of patient harm associated with the use of anticoagulant therapy. Note: This requirement applies only to hospitals that provide anticoagulant therapy and/or long-term anticoagulation prophylaxis (for example, atrial fibrillation) where the clinical expectation is that the patient’s laboratory values for coagulation will remain outside normal values. This requirement does not apply to routine situations in which short term prophylactic anticoagulation is used for venous thrombo-embolism prevention (for example, related to procedures or hospitalization) and the clinical expectation is that the patient’s laboratory values for coagulation will remain within, or close to, normal values.

To achieve better patient outcomes, patient education is a vital component of an anticoagulation therapy program. Effective anticoagulation patient education includes face-to-face interaction with a trained professional who works closely with patients to be sure that they understand the risks involved with anticoagulation therapy, the precautions they need to take, and the need for regular International Normalized Ratio (INR) monitoring. The use of standardized practices for anticoagulation therapy that include patient involvement can reduce the risk of adverse drug events associated with heparin (unfractionated), low molecular weight heparin, and warfarin.

1. Use only oral unit-dose products, prefilled syringes, or premixed infusion bags when these types of products are available. Note: For pediatric patients, prefilled syringe products should be used only if specifically designed for children.

2. Use approved protocols for the initiation and maintenance of anticoagulant therapy.

3. Before starting a patient on warfarin, assess the patient’s baseline coagulation status; for all patients receiving warfarin therapy, use a current International Normalized Ratio (INR) to adjust this therapy. The baseline status and current INR are documented in the medical record. Note: The patient’s baseline coagulation status can be assessed in a number of ways, including through a laboratory test or by identifying risk factors such as age, weight, bleeding tendency, and genetic factors.

4. Use authoritative resources to manage potential food and drug interactions for patients receiving warfarin.

5. When heparin is administered intravenously and continuously, use programmable pumps in order to provide consistent and accurate dosing.

6. A written policy addresses baseline and ongoing laboratory tests that are required for anticoagulants.

7. Provide education regarding anticoagulant therapy to prescribers, staff, patients, and families. Patient/family education includes the following:
   - The importance of follow-up
   - Monitoring
   - Compliance
- Drug-food interactions - The potential for adverse drug reactions and interactions

8. Evaluate anticoagulation safety practices, take action to improve practices, and measure the effectiveness of those actions in a time frame determined by the organization.

Introduction to Reconciling Medication Information

The large number of people receiving health care who take multiple medications and the complexity of managing those medications make medication reconciliation an important safety issue. In medication reconciliation, a clinician compares the medications a patient should be using (and is actually using) to the new medications that are ordered for the patient and resolves any discrepancies.

The Joint Commission recognizes that organizations face challenges with medication reconciliation. The best medication reconciliation requires a complete understanding of what the patient was prescribed and what medications the patient is actually taking. It can be difficult to obtain a complete list from every patient in an encounter, and accuracy is dependent on the patient’s ability and willingness to provide this information. A good faith effort to collect this information is recognized as meeting the intent of the requirement. As health care evolves with the adoption of more sophisticated systems (such as centralized databases for prescribing and collecting medication information), the effectiveness of these processes will grow.

This National Patient Safety Goal (NPSG) focuses on the risk points of medication reconciliation. The elements of performance in this NPSG are designed to help organizations reduce negative patient outcomes associated with medication discrepancies. Some aspects of the care process that involve the management of medications are addressed in the standards rather than in this goal. These include coordinating information during transitions in care both within and outside of the organization (PC.02.02.01), patient education on safe medication use (PC.02.03.01), and communications with other providers (PC.04.02.01).

In settings where medications are not routinely prescribed or administered, this NPSG provides organizations with the flexibility to decide what medication information they need to collect based on the services they provide to patients. It is often important for clinicians to know what medications the patient is taking when planning care, treatment, and services, even in situations where medications are not used. A new requirement in this NPSG addresses the patient’s role in medication safety: it requires organizations to inform the patient about the importance of maintaining updated medication information.

Maintain and communicate accurate patient medication information.

1. Obtain information on the medications the patient is currently taking when he or she is admitted to the hospital or is seen in an outpatient setting. This information is documented in a list or other format that is useful to those who manage medications. Note 1: Current medications include those taken at scheduled times and those taken on an as-needed basis. See the Glossary for a definition of medications. Note 2: It is often difficult to obtain complete information on current medications from a patient. A good faith effort to obtain this information from the patient and/or other sources will be considered as meeting the intent of the EP.

2. Define the types of medication information to be collected in non–24-hour settings and different patient circumstances. Note 1: Examples of non–24-hour settings include the emergency department, primary care, outpatient radiology, ambulatory surgery, and diagnostic settings. Note 2: Examples of medication information that may be collected include name, dose, route, frequency, and purpose.

3. Compare the medication information the patient brought to the hospital with the medications ordered for the patient by the hospital in order to identify and resolve discrepancies. Note: Discrepancies include omissions, duplications, contraindications, unclear information, and changes. A qualified individual, identified by the hospital,
does the comparison. (See also HR.01.06.01, EP 1)

4. Provide the patient (or family as needed) with written information on the medications the patient should be taking when he or she is discharged from the hospital or at the end of an outpatient encounter (for example, name, dose, route, frequency, purpose). Note: When the only additional medications prescribed are for a short duration, the medication information the hospital provides may include only those medications. For more information about communications to other providers of care when the patient is discharged or transferred, refer to Standard PC.04.02.01.

5. Explain the importance of managing medication information to the patient when he or she is discharged from the hospital or at the end of an outpatient encounter. Note: Examples include instructing the patient to give a list to his or her primary care physician; to update the information when medications are discontinued, doses are changed, or new medications (including over-the-counter products) are added; and to carry medication information at all times in the event of emergency situations. (For information on patient education on medications, refer to Standards MM.06.01.03, PC.02.03.01, and PC.04.01.05.)

Goal 6.

Improve the safety of clinical alarm systems

Goal 7.

Reduce the risk of healthcare-associated infections.

Comply with either the current Centers for Disease Control and Prevention (CDC) hand hygiene guidelines or the current World Health Organization (WHO) hand hygiene guidelines.

For more of the NPSG’s goals please visit: http://www.jointcommission.org/assets/1/6/2015_NPSG_HAP.pdf

CLINICAL OPPORTUNITIES FOR SAFETY IMPROVEMENT

- Appropriate use of prophylaxis to prevent venous thromboembolism in clients at risk
- Use of perioperative beta-blockers in appropriate clients to prevent perioperative morbidity and mortality
- Use of maximum sterile barriers while placing central intravenous catheters to prevent infections
- Appropriate use of antibiotic prophylaxis in surgical clients to prevent perioperative infections
- Asking that clients recall and restate what they have been told during the informed consent process
- Continuous aspiration of subglottic secretions (CASS) to prevent ventilator-associated pneumonia
- Use of pressure-relieving bedding materials to prevent pressure ulcers
- Use of real-time ultrasound guidance during central-line insertion to prevent complications
- Client self-management for warfarin (Coumadin) to achieve appropriate outpatient anticoagulation and prevent complications
- Appropriate provision of nutrition, with a particular emphasis on early enteral nutrition in critically ill and surgical clients
- Use of antibiotic-impregnated central-venous catheters to prevent catheter-related infections

To speed the most urgent improvements in client safety, the Institute for Healthcare Improvement (IHI), a nonprofit organization headquartered in Cambridge, Massachusetts, launched the 100,000 Lives campaign in December 2004. The American Medical Association, the American Nurses Association, and JCAHO signed on as collaborators together with four government agencies: the Centers for Disease Control and Prevention, the Centers for Medicare and Medicaid Services, the Veterans Health Administration, and AHRQ.

This campaign focuses on six basic measures that could save as many as 100,000 lives each year if even 2,000 hospitals adopted them. The good news is that nearly 3,000 hospitals have enrolled in this campaign in its first year (IHI, 2005).

The six measures of the campaign are based on the best practices from
AHRQ's Making Healthcare Safer report and include:

1. Prevention of ventilator-associated pneumonia
2. Prevention of central-line infections
3. Prevention of surgical-site infections
4. Deployment of rapid-response teams*
5. Assurance of optimal care for clients with acute myocardial infarction
6. Prevention of adverse drug events

*Rapid-Response Teams ensure that critical early warnings of a client’s deteriorating condition and potential cardiac arrest are taken seriously. Their role is to assess, stabilize, assist with communication, educate and support, and assist with transfer, if necessary. Research in Australia has shown that rapid-response teams may be able to cut hospital death rates by 20% or more (Berwick, 2005).

In 2005, JCAHO released Healthcare at the Crossroads: Strategies for Improving the Medical Liability System and Preventing Client Injury. This report outlines a public policy action plan based on three broad recommendations:

1. Pursue client safety initiatives that prevent medical injury.
2. Promote open communication between clients and practitioners.
3. Create an injury compensation that is client-centered and serves the common good. (JCAHO, 2005)

Public Education Measures Related to Client Safety

Making the client and the family part of the healthcare team is an important strategy in improving client safety and reducing medical errors. There are organizations that provide material to educate clients about their role on the healthcare team. The AHRQ has developed a simple message for clients called Five Steps to Safer Healthcare, as well a comprehensive patient fact sheet that hospitals are encouraged to make available to clients.

The single most important way clients can help to prevent errors is to be active members of the healthcare team. That means taking part in every decision about their healthcare. Research shows that clients who are personally involved with their care tend to get better results. Some specific tips, based on the latest scientific evidence about what works best, can be found on the following page.

Medicines

1. Make sure that all of your doctors know about everything you are taking. This includes prescription and over-the-counter medicines, and dietary supplements such as vitamins and herbs.
2. At least once a year, bring all of your medicines and supplements with you to your doctor. "Brown bagging" your medicines can help you and your doctor talk about them and find out if there are any problems. It can also help your doctor keep your records up to date, which can help you get better quality care.
3. Make sure your doctor knows about any allergies and adverse reactions you have had to medicines. This can help you avoid getting a medicine that can harm you.
4. When your doctor writes you a prescription, make sure you can read it. If you can’t read your doctor's handwriting, your pharmacist might not be able to either.
5. Ask for information about your medicines in terms you can understand—both when your medicines are prescribed and when you receive them. What is the medicine for? How am I supposed to take it, and for how long? What side effects are likely? What do I do if they occur? Is this medicine safe to take with other medicines or dietary supplements I am taking? What food, drink, or activities should I avoid while taking this medicine?
6. When you pick up your medicine from the pharmacy, ask: Is this the medicine that my doctor prescribed? A study by the Massachusetts College of Pharmacy and Allied Health Sciences found that 88% of medicine errors involved the wrong drug or the wrong dose.
7. If you have any questions about the directions on your medicine labels, ask. Medicine labels can be hard to understand. For example, ask if "four doses daily" means taking a dose every 6 hours around the clock or just during regular waking hours.
8. Ask your pharmacist for the best device to measure your liquid medicine.
Also, ask questions if you're not sure how to use it. Research shows that many people do not understand the right way to measure liquid medicines. For example, many use household teaspoons, which often do not hold a true teaspoon of liquid. Special devices, like marked syringes, help people to measure the right dose. Being told how to use the devices helps even more.

9. Ask for written information about the side effects your medicine could cause. If you know what might happen, you will be better prepared if it does—or, if something unexpected happens instead. That way, you can report the problem right away and get help before it gets worse. A study found that written information about medicines can help clients recognize problem side effects and then give that information to their doctor or pharmacist.

**Hospital Stays**

1. If you have a choice, choose a hospital at which many clients have the procedure or surgery you need. Research shows that clients tend to have better results when they are treated in hospitals that have a great deal of experience with their condition.
2. If you are in a hospital, consider asking all healthcare workers who have direct contact with you whether they have washed their hands. Handwashing is an important way to prevent the spread of infections in hospitals. Yet, it is not done regularly or thoroughly enough. A recent study found that when clients checked whether healthcare workers washed their hands, the workers washed their hands more often and used more soap.
3. When you are being discharged from the hospital, ask your doctor to explain the treatment plan you will use at home. This includes learning about your medicines and finding out when you can get back to your regular activities. Research shows that at discharge time doctors think their clients understand more than they really do about what they should or should not do when they return home.

**Surgery**

1. If you are having surgery, make sure that you, your doctor, and your surgeon all agree and are clear on exactly what will be done. Doing surgery at the wrong site (for example, operating on the left knee instead of the right) is rare. But even once is too often. The good news is that wrong-site surgery is 100% preventable. The American Academy of Orthopedic Surgeons urges its members to sign their initials directly on the site to be operated on before the surgery.

**Other Steps You Can Take**

1. Speak up if you have questions or concerns. You have a right to question anyone who is involved with your care.
2. Make sure that someone, such as your personal doctor, is in charge of your care. This is especially important if you have many health problems or are in a hospital.
3. Make sure that all health professionals involved in your care have important health information about you. Do not assume that everyone knows everything they need to.
4. Ask a family member or friend to be there with you and to be your advocate (someone who can help get things done and speak up for you if you can't). Even if you think you don't need help now, you might need it later.
5. Know that "more" is not always better. It is a good idea to find out why a test or treatment is needed and how it can help you. You could be better off without it.
6. If you have a test, don't assume that no news is good news. Ask about the results.
7. Learn about your condition and treatments by asking your doctor and nurse and by using other reliable sources.

**Infants and children are at greatest risk of harm from medical errors, so it is essential**
that parents be well informed about how to reduce the risk of medical errors in their children's healthcare. Below are recommendations for parents to ensure the safety of their child and quality of care.

**TIPS FOR PARENTS: PREVENTING MEDICATION ERRORS**

- On admittance to the hospital, provide the healthcare practitioner (HCP) with an up-to-date list of all medicines (prescription and over-the-counter) and dietary supplements that your child is taking. This will help minimize medication errors and prevent drug interactions during your child's hospital stay.
- Make sure your child's HCP is aware of any allergies your child may have. For life-threatening allergies, be sure that your child wears a MedicAlert bracelet at all times.
- Medications administered to children are based on the child's weight in kilograms. For purposes of preparing appropriate dosages of medicines, your child's weight in pounds must be divided by 2.2 to convert it into kilograms. Be aware of this calculation and/or your child's weight in kilograms, and reconfirm the correct dosage with your child's HCP if you have concerns.
- Be sure that you are provided with verbal and written information about your child's medications, the common side effects, and the adverse events that should be reported to your child's HCP.
- Pay close attention to how your child is feeling while in the hospital. Notify the HCP immediately if you notice any negative side effects from the administered medications, such as sudden difficulty in swallowing or breathing.
- If your child is given a liquid medication to take after release from the hospital, be sure you are provided with an appropriate measuring device and instructions to ensure proper medication doses.
- In case of an emergency, be sure that your child's school has a list of any medical conditions or allergies your child may have.

A truly national response to the IMO’s call to reduce preventable client injuries by 90% requires that every healthcare board, executive, physician, and nurse make improving safety an absolutely top strategic priority—fully equal to the corporate priority of financial health. At a national level, such a commitment has yet to emerge; indeed, it is not in sight.

**Post Test**

1. 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. A. True B. False

2. The Institute of Medicine defines a medical error as “the failure of a planned action to be completed as intended (ie, error of execution) or the use of a wrong plan to achieve an aim (ie, error of planning).” Errors can include problems in practice, products, procedures, and systems. A. True B. False

3. An adverse effect is an undesired harmful effect resulting from a medication or other intervention such as surgery. A. True B. False

4. Researchers have identified two types of errors humans make: associated and collective errors. A. True B. False

5. 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). A. True B. False

6. 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). A. True B. False

7. Computerized prescriber order entry (CPOE) is aiding many hospitals to reduce ADEs but it has not eliminated medication errors. A. True B. False

8. Fatigue, the use of drugs and alcohol, being ill or ones mental state are NOT considered factors that contribute to medical errors. A. True B. False

9. 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. A. True B. False

10. Infants and children are at greatest risk of harm from medical
errors.

A. True    B. False

Food and Drug Administration
http://www.fda.gov

Healthcare at the Crossroads
Strategies for improving the medical liability system and preventing client injury
http://www.jcaho.org

Institute for Healthcare Improvement (IHI)
http://www.ihi.org

Institute for Safe Medication Practices
http://www.ismp.org

Joint Commission on Accreditation of Healthcare Organizations (JCAHO)
http://www.jcaho.org

The Leapfrog Group
http://www.leapfroggroup.org

National Center for Client Safety
http://www.clientsafety.gov

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

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

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