CLINICAL SOLUTIONS

Medical Education Training Centers

TO ERR IS HUMAN ...

TO PREVENT IS DIVINE

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A Self-Study Learning Module

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Preventing Medical Errors

This course will provide and introduction and overview of the safety concerns facing health care systems today, including data and background on the magnitude of the problem Error reduction and prevention, and multi-causal analysis. Goals of the Joint Commission and National Patient Safety goals will be discussed. The ultimate goal is to promote safety and improve patient outcomes. Patient and Family participation will also be stressed within this course.

Florida Statute requirements: Section 456.013(7), Florida Statutes, now requires completion of a two hour course relating to prevention of medical errors as part of the renewal process for licensure. The Board has amended rule 64B19-13.003, Florida Code (F.A.C.), to include this requirement

The IOM reports, the Florida State legislature mandated that all licensees must complete a two-hour course on prevention of medical errors, which meets the criteria of Florida Statute 456.013, for initial licensure and biennial renewal.

Research funded by the Agency for Healthcare Research and Quality (AHRQ) has shown that medical errors result most frequently from systems errors-organization of health care delivery and how resources are provided in the delivery system. Only rarely are medical errors the result of carelessness or misconduct of a single individual

Mistakes can happen anywhere; in hospitals, they happen in outpatient clinics, they happen in nursing homes and home care, and they happen in self-care. We as clinicians need to acknowledge that they can and do happen. The challenge is to avoid them, and when mistakes do occur, to prevent them from causing harm to our patients.

Errors can occur at any point in the health care delivery system. Acknowledging that errors happen, learning from those errors, and working to prevent future errors represents a major change in the culture of health care. The shift in culture has occurred; from blame and punishment to analysis of the root causes of errors and strategies to improve systems and processes. Every person on the healthcare team has a role in making health care safer for patients and workers.

Objectives

1. Describe the magnitude of medical errors and the effect on patient safety
2. Identify the processes to approach error reduction and prevention
3. Recognize error prone situations. Processes and identify factors that impact the occurrence of errors
4. Define types medical errors
5. Define the process and benefit of multi-causal analysis (i.e. Root Cause, Sentinel Events and/or FEMA)
6. Describe processes to improve patient outcomes
7. Identify safety needs of special populations
8. Discuss the importance of public (community) education in reducing errors.
9. Define Patient/Family responsibilities in aiding health care providers to reduce errors
10. Describe what each of us can do to protect patients and ourselves from accidental injury.

Types of Medical Errors

The November 1999 report of the Institute of Medicine (IOM), entitled *To Err Is Human: Building A Safer Health System*[1], focused a great deal of attention on the issue of medical errors and patient safety. The report indicated that as many as 44,000 to 98,000 people die in hospitals each year as a result of medical errors.

A report on medication safety *Preventing Medication Errors*[2] was introduced in 2007 emphasizing the importance of severely reducing medication errors, providing clinicians with decision support and information tools, and improving and standardizing medication labeling and drug related information.

A definition of medication error is, "any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems. Systems include prescribing, order entry and communication amongst health care providers, product labeling, packaging, dispensing, distribution, administration, education, monitoring and use.

The IOM report 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)."

"**Adverse medical incident**" means medical negligence, intentional misconduct, and any other act, neglect, or default of a health care facility or health care provider which caused or could have caused injury to or the death of a patient, including, but not limited to, those incidents that are required by state or federal law to be reported to any governmental agency or body, incidents that are reported to or reviewed by any health care facility peer review, risk management, quality assurance, credentials, or similar committee or any representative of any such committee. (FS 381.028)

An adverse event attributable to error is a preventable adverse event, also called a **sentinel event**, because it signals the need to ask why the error occurred and make changes in the system.

Near misses or close calls are potential adverse events, errors that could have caused harm but did not, either by mere chance or because something or someone in the system intervened. For example, a nurse who recognizes a potential drug overdose in a physician's order and does not administer the drug but instead calls the error to the physician's attention has prevented an adverse drug event (ADE). Close calls provide opportunities for developing preventive strategies and actions, and should receive the same level of scrutiny as adverse events.

Surgical Errors

Joint Commission on Accreditation of Healthcare Organizations (JCAHO, 1998) found that wrong-site surgery was one of the most common errors in orthopedic procedures. Risk factors contributing to these errors include more than one surgeon involved in the case, multiple procedures performed during the surgical case, and unusual time constraints, particularly pressure to speed up preoperative procedures.

While wrong site surgeries are not the sole responsibility of the operating surgeon, all personnel have a role in ensuring patient safety by verifying the surgical site and pointing out a possible error. Admittedly, this can be difficult in the presence of an attitude that the surgeon should never be questioned.

To reduce the risk of wrong-site surgeries, JCAHO recommends the following strategies:

- Clearly mark the operative site, involving the patient (or the family when appropriate) in the marking process
- Require oral verification of the correct site in the operating room by each member of the surgical team
- Develop a verification checklist that lists all documents referencing the intended surgical procedure and site

Diagnostic Errors

According to JCAHO (2002), misdiagnosis is a major factor contributing to delays in treatment. There is a high incidence of all sentinel event cases of patient death and/or permanent injury due to delays in treatment in hospital emergency rooms. However, these serious events also happen in other healthcare settings, including intensive care units, medical-surgical units, inpatient psychiatric hospitals, the operating room, and in the home care setting.

Medication Errors

Medication-related error is one of the most common types of error, and of primary concern to nurses who administer medications, as well as to the practitioner who prescribes medications, and the pharmacist who dispenses medications. Medication errors are called preventable adverse drug events (ADEs).

The three most common errors are:

- Omission errors (failure to administer an ordered medication dose).
- Improper dose/quantity errors (any medication dose, strength or quantity that differs from that prescribed).
- Unauthorized drug errors (the medication dispensed and/or administered was not authorized by the prescriber); this category includes dispensing or administering the wrong drug.

Factors and Processes Affecting Medication Errors

In hospitals, medication errors are common during every step of the administration process; obtaining the medication, prescribing it, dispensing it, administering it, and monitoring its impact. Taking into account all the many types of errors that occur in a hospital, there is an average of at least one medication error each day (Institute of Medicine, 2006). Due to this complexity to the medication process, there is much room for potential error. The gold standard to protect the client from medication errors mediation administration follows the “five rights” for drug administration.

FIVE RIGHTS OF MEDICATION ADMINISTATION
1. Right medication 2. Right dose 3. Right client 4. Right route 5. Right time The following additions have been added to the rights as we once knew them.
6. Right for Information 7. Right to Decline or Refuse 8. Right documentation 9. Right evaluation/ reassessment

Safe Medication Administration

Nurses must be alert and critically think about the many factors that can cause medication errors. Reasons for medication administration errors may include nurse error, system design, the actions of physicians, pharmacists, and other nurses.

There are many reasons nurses fall to the errors. The following categories are: (a) inadequate knowledge and skill, (b) failure to comply with the policy and procedures or “short cutting” the process, (c) failure in communication, and (d) individual and/or system issues.

Inadequate knowledge and skill can reflect the patients lack of knowledge regarding his/her diagnosis and the correct administration of medication. Nurse error can relate to not knowing how to operate and IV pump/infusion device, mistaking IV lines for NG tubes/feeding tubes, failure to adequately prepare medications before administration, failure to check orders with the pyxis and the medication administration record (MAR), failure to check and use at least two identifiers prior to administration of medications, and failure to monitor the patient after the administration of medications for side effects.

Failure to comply with policy and procedures is usually the lack of attention to the safeguarding of proper administration procedures to prevent errors; not checking the patient's identification or allergies, not checking the MAR, and not looking at medications given to the nurse late by a pharmacy.

Failure to communicate can include the following factors: transcription errors, use of illegal abbreviations, illegible handwriting, and incorrect interpretation of the physicians order, use of verbal orders, failure to document medications given or omitted, and unclear MARs. For example, the abbreviation "D/C" means both "discharge" and "discontinue."

Lastly, the reason for individual nurse and/or system issues, not matter how long you have been a nurse, can deal with the following: workload, distractions when obtaining and administering, working off shifts, working overtime, and not working on the unit you are accustomed to. In addition, many hospitals use different manufacturers that distribute products that are look-alike and sound alike drugs names, unclear labeling, multi-dose vials, similar packaging, failure to check the orders against the MAR and the pyxis, and failure to specify drug concentrations on IV bags. For example: *Hespan* and *heparin* and *amrinone* and *amiodarone.*

Institute a Safe Medication Practice

Examples of Error-Prone Drug Information

Abbreviations	Intended Meaning	Misinterpretation	Correction
AD, AS, AU	Right ear, left ear, each ear	OD, OS, OU (right eye, left eye, each eye)	Spell out "right ear," "left ear," "each ear"
IJ	Injection	"IV" or "intrajugular"	Spell out "injection"
TIW or tiw	3 times a week	"3 times a day" or "twice in a week"	Use "3 times weekly"
Dose Designations			
Trailing zero after decimal point (1.0 mg)	1 mg	10 mg if the decimal point is not seen	Do not use trailing zeros for doses expressed in whole numbers
Abbreviations with a period following (mg. or mL.)	mg, mL	The period is unnecessary and could be mistaken as the number 1 if poorly written	Omit period and use mg, mL
Drug name and dose run together (especially problematic for drug names ending in "L" such as Tegretol300 mg)	Tegretol 300 mg	Tegretol 1300 mg	Place adequate space between the drug name, dose, and unit of measure
Symbols			
x3d	For three days	"3 doses"	Use "for three days"
/ (slash mark)	Separates two doses or indicates "per"	Number 1 (e.g., "25 units/10 units" misread as "25 units and 110" units)	Use "per" rather than a slash mark to separate doses
&	And	"2"	Use "and"

Steps in Reducing Drug-Name Errors

1. Have the knowledge of the drug and dosage of the medication you will be administering
2. Have a standardize system in place for processing medication doses and dose times.
3. Standardize abbreviations
4. Limit the different IV/infusion pumps
5. Implement Physician Order Entry
6. Implement unit doses
7. Do not store concentrated potassium on the patient care units and be sure pharmacy dilutes the medication.

Definition of Medical Harm:

"Unintended physical injury resulting form or contributed to by medical care (including the absence of indicated medical treatment), that requires additional monitoring, treatment, or hospitalization or that results in death." (IHI, 2006)

How Errors Occur

Two types of errors:

Errors of Omission:

Errors of omission result from actions not taken, such as a patient fall or even a suicide, because of lapse of observation or supervision

Errors of Commission:

Errors of commission occur from wrong actions taken, such as giving a patient an incompatible blood product, giving a wrong medication or incorrectly labeling a blood draw incorrectly.

Errors affect everyone; patients, families, medical device manufacturers, pharmacists, doctors, nurses, lab personnel and therapists.

Most medical errors are due to system related errors and are not attributable to individual negligence or misconduct.

Joint Commission National Patient Safety Goals (2008) relate to the following goals:

Goal 1 Improve the accuracy of patient identification

a. Use at least two patient identifiers when providing care, treatment or services

Goal 2 Improve the effectiveness f communication among caregivers.

b. Verbal and telephone orders or telephonic reporting of critical test results, verify the complete order or test result by having the person receiving the information record and "read back" the complete order or test result.

c. Standardize a list of abbreviations, acronyms, symbols, and dose designation that are not to be used throughout the organization

d. Measure and assess, and if appropriate, take action to improve the timeliness of reporting, and the timeliness of receipt by the responsible licensed caregiver, of critical test results and values

e. Implement a standardized approach to “hand-off” communication, including an opportunity to ask and respond to questions.

Goal 3.Improve the safety of using medications

a. Identify and, at a minimum, annually review a list of look-alike/sound-alike drugs used by the organization, and take action to prevent errors involving the interchange of these drugs.

b. Label all medications, medication containers (for example, syringes, medicine cups, basins), or other solutions on and off the sterile field.

c. Reduce the likelihood of patient harm associated with the use of anticoagulation therapy.

Goal 7 Reduce the risk of health care-associated infections

a. Comply with current World Health Organization (WHO) Hand Hygiene Guidelines or Centers for Disease Control and Prevention (CDC) hand hygiene guidelines.
b. Manage as sentinel events all identified cases of unanticipated death or major permanent loss of function associated with a health care-associated infection.

Goal 8 Accurately and completely reconcile medications across the continuum of care

a. There is a process for comparing the patient’s current medications with those ordered for the patient while under the care of the organization
b. A complete list of the patient’s medications is communicated to the next provider of service when a patient is referred or transferred to another setting, service, practitioner or level of care within or outside the organization. The complete list of medications is also provided to the patient on discharge from the facility.

Goal 9 Reduce the risk of patient harm resulting from falls

c. Implement a fall reduction program including an evaluation of the effectiveness of the program

Goal 13 Encourage patients’ active involvement in their own care as a patient safety strategy

a. Define and communicate the means for patients and their families to report concerns about safety and encourage them to do so.

Goal 15 The organization identifies safety risks inherent in its patient population

a. The organization identifies patients at risk for suicide. [Applicable to psychiatric hospitals and patients being treated for emotional or behavioral disorders in general hospitals – NOT APPLICABLE TO CRITICAL ACCESS HOSPITALS]

Goal 16 Improve recognition and response to changes in a patient's condition

1. The organization selects a suitable method that enables health care staff members to directly request additional assistance from a specially trained individual (s) when the patient's condition appears to be worsening. [Critical Access Hospital, Hospital]

Root Cause Analysis (RCA)

JCAHO requires that a thorough, credible root cause analysis (RCA) be performed for each reported sentinel event. The goal of a Root Cause Analysis is to find out:

- What happened
- Why did it happen
- What do you do to prevent it from happening again

Root Cause Analysis (RCA) is a tool for identifying error prevention strategies. It is a process for discovering basic and contributing causes of error with the continuing goal of preventing recurrence.

RCA is an interdisciplinary process involving:

- Experts from all services involved
- Those who are the most familiar with the situation
- Asking why at each level of cause and effect
- Identification of changes needed
- As great a degree of impartiality as possibility

A credible 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.

In July 2001, the Agency for Healthcare Research and Quality released a report outlining evidenced-based clinical recommendations for improving patient safety. Titled "Making Health Care Safer: A Critical Analysis of Patient Safety Practices," the report reviews 79 practices to prevent adverse events and improve patient safety, based on current research. The 11 most highly rated practices are listed in Box 5. The authors of this report emphasized that this list should not be considered complete, and that it was weighted toward care of the very ill, rather than the mildly or chronically ill. Other measures to improve patient safety are summarized in Box 1.

Box 5 - Clinical Opportunities for Safety Improvement

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

In July 2002, The Joint Commission on the Accreditation of Healthcare Organizations (JCAHO) issued new mandatory goals and recommendations to improve patient safety, to take effect in January 2003. 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 2003 National Patient Safety Goals and Recommendations are summarized in Box 6.

Box 6. 2003 National Patient Safety Goals and Recommendations

- Goal 1. Improve the accuracy of patient identification.
- Recommendations:
- Use at least two patient identifiers (neither of which is the patient's room number) whenever taking blood samples or administering medications or blood products.
- Prior to the start of any surgical or invasive procedure, conduct a final verification process, such as a "time out," to confirm the correct patient, procedure, and site, using active - not passive - communication techniques
- Goal 2. Improve the effectiveness of communication among caregivers.
- Recommendations:
- Implement a process for taking verbal or telephone orders that requires a verification "read-back" of the complete order by the person receiving the order.
- Standardize the abbreviations, acronyms and symbols used throughout the organization, including a list of abbreviations, acronyms and symbols not to use.
- Goal 3. Improve the safety of using high-alert medications.
- Recommendations:
- Remove concentrated electrolytes (including, but not limited to, potassium chloride, potassium phosphate, sodium chloride >.9%) from patient care units.
- Standardize and limit the number of drug concentrations available in the organization.
- Goal 4. Eliminate wrong-site, wrong-patient and wrong-procedure surgery.
- Recommendations:
- Create and use a preoperative verification process, such as a checklist, to confirm that appropriate documents (e.g., medical records, imaging studies) are available.
- Implement a process to mark the surgical site and involve the patient in the marking process.

- Goal 5. Improve the safety of using infusion pumps.
- Recommendations:
- Ensure-free-flow protection on all general-use and PCA intravenous infusion pumps used in the organization.
- Goal 6. Improve the effectiveness of clinical alarm systems.
- Recommendations:
- Implement regular preventive maintenance and testing of alarm systems.
- Assure that alarms are activated with appropriate settings and are sufficiently audible with respect to distances and competing noise within the unit.

Factors that influence the occurrence of errors by the nurse

- Distraction/inattention while doing tasks
- Fatigue, too many consecutive days worked
- Increasing patient volume, staff overworked
- Illegible handwriting or incomplete orders can contribute to the misinterpretation or incomplete information causes a gap in the care of patients
- Mislabeling or not labeling medications/syringes
- Trial and error used when unfamiliar situations or new problem arises
- Used an old solution or, technology to resolve a new situation
- Familiarity-seeing what we want to see even if it is incorrect causes of mistakes.

Factors that affect medication errors

- Miscommunication
- Misidentification of patient
- Incorrect patient label
- Improper abbreviation
- Improper packaging/labeling
- Sound alike drug
- Incorrect placement (i.e.: in pyxis drawer)
- Inaccurate calculation

- Drug not available
- Incorrect/improper order interpretation
- Equipment issue
- Nurse or patient off unit
- Incorrect dilutent

Leape and colleagues reported more that 15 types of medication errors. These are as follows: wrong dose, wrong choice, wrong drug, known allergy, missed dose, wrong time, wrong frequency, wrong technique, drug-drug interaction, wrong route, and extra dose, failure to act on test, equipment failure, inadequate monitoring, preparation error, and more. 130 errors by physicians, the majority were wrong dose, wrong choice of drug, and known allergy. Among nursing, 126 pertained to medication administration errors, the majority were wrong dose, wrong technique, and wrong drug.

The nursing process is helpful when trying to identify how a medication error or near miss occurred. Identification of a near miss is just as important as identification of an actual error in that it helps highlight issues with the medication administration process. A full **assessment** is important in understanding what may have gone wrong anywhere in the process. Looking at the error from all angles, results in a **diagnosis** of exactly where the mistake(s) was/were made. Then it is important to **implement** corrective action so that the error does not occur again. A system of good checks and balances and a food error free outcome for our patients is the final **evaluation.**

There are five stages of the medication process:

1. Ordering and prescribing
2. Transcribing and verifying
3. Dispensing and delivering
4. Administering
5. Monitoring and reporting

Prescribing and Ordering

When following the five stages of medication administration, ordering and prescribing are the two most often causes of a series of errors that result in a patient receiving the wrong dose or wrong medication. For example if a physician does not transcribe and order clearly and legibly and/or incomplete; errors can be made in the translation of the order. In order to ensure a safe ordering/prescribing process it is important to have essential information readily available to those involved. This can include allergies/sensitivities, age, weight, lab values, and current medications compatibility. Consideration should be given to computer generated order entry systems. Illegible physician orders are a high risk for incurring possible mistakes. For hand-written orders, policies and procedures should address acceptable order format. .Abbreviations and acronyms should be avoided. Standardized processes such as medication administration times, inpatient order format, and protocols for verbal orders to reduce variability in medication administration systems should be considered. A system policy detailing the process for order clarification by nurses or pharmacists decreases the risk of inhibition from aggressive and confrontational behavior when seeking clarification from ordering physicians can be significant detail in preventing errors.

Transcribing, Dispensing, and Delivering

In the hospital setting, physicians, nurses, and pharmacists are involved in transcribing, verifying, dispensing, and delivering medications. With any process, specifically medication, as the number of staff members increase and the process increases with initiation and implementation, the greater the possibility for error can occur. The pharmacist has an important role in intercepting and preventing prescribed order errors.

Current drug reference texts and online tools should be available to all medical staff, pharmacy, and nursing staff. Online programs specific to critical care drip medications and calculations are integral in preventing human calculation errors. A process for pharmacy to double-check and verify critical care, high-risk, and compounded pharmaceutical medications is also recommended to increase patient safety.

Medication Administration

Nurses remain primarily involved in the administration of medications. The responsibility is similar to that of the pharmacist in dispensing and administration. The nurse must maintain his/her knowledge of medications being administered. This encompasses drug administration and the interactions with other agents. The availability to access reference materials either in a text or on the medication administration machines, it is imperative to maintain and ensure patient safety.

Bar Code Medication Administration (BCMA) is the use of a wireless scanner device which is first scanned to match the patient wristband identifier with each medication given to the patient. This technology has shown to decrease medication dispensing and adverse medication reactions, however it does not replace the fundamental safety of accurate patient identification by the nurse. The nursing staff cannot abandon their professional responsibility for checking medications after the BCMA technology confirms the correct medication and dose. Errors have been identified with this technology when bar code can not be scanned, or the medication bar code has not been entered into the system. The bar code system can not replace the visualization of the medication and description along with the use of scanning.

Confirmation of all the “rights” prior to medication administration should be done with each medication administration. The “rights” are included on the previous list, s well as the nurses “rights” to safe medication practice. The right to a complete and clear order, the right to have the correct drug, route, dose dispensed, the right to have access to up-to-date drug information, the right to have policies to guide safe medication administration, the right to administer medication safely and to identify system problems, the right to STOP, THINK, and be vigilant when administering medications. Just as you advocate for your patients, nurses have the right to advocate for their ability to practice in safe settings.

Medication reconciliation is becoming a mandatory aspect of all medical and nursing care facilities. Medication reconciliation practiced at each transition of patient care is a Joint Commission National Patient Safety Goal. This improves safety by increasing communication between all caregivers. Medication reconciliation is a process of comparing a patient’s medication orders to all of the medication a patient has been taking. This is done to avoid medication errors such as duplication, dosing errors, drug interactions, and omissions. This process can be done on paper or electronic technology. Computer based programs are being utilized increasingly in hospital and outpatient clinic settings. On patient discharge a final reconciliation is completed and signed by the primary physician. This provides a thorough list of medications the patient is to continue taking with dose and schedule. The reconciliation is printed, signed by staff and patient and sent home wit the patient’s other discharge documents

Monitoring

Without reporting, many errors may not be known. Medication errors are a clear thereat to patient safety and errors usually involve a multiple of disciplines when they occur. Developing a culture of self-reporting without repercussions will provide and environment of trust and incorporate a culture of patient safety where learning is encouraged and blame is discouraged.

Intensive care units (ICUs) provide care to the sickest patients who require complex care. These patients are most vulnerable to medical errors and prone to injury. Significant errors are from medication errors, most commonly due to wrong dose errors. Typically, the medical errors occur during routine care, not during admissions or emergencies.

The degree of intensity of care in the ICU and the highly skilled clinicians tend to overlook the basic needs and this sometimes leads to fatal misconnections, life-threatening mishaps, infections, and other complications which can be avoided. Patients in the ICU often have central venous access, arterial lines, chest tubes, feeding tubes, drains, all of which can lead to and require invasive procedures, as well as, lead to adverse events; medical errors.

JCAHO (2006), notes that tubing and catheter misconnections are “a persistent and potentially deadly occurrence.” Most misconnections are caught and corrected; there can be life-threatening consequences. Nine sentinel events involving tubing misconnections have been reported to JCAHO, eight of which resulted in death and the other in permanent loss of function.

Many misconnections are from poor luer lock connectors. These connectors have universal connectors with a “Female” and a “Male” design to lock together. Unfortunately, having these connectors allows for tubes or catheters of contradictory function to be connected; potentially a disastrous result. Contributing factors for misconnections include the routine use of tubes and catheters for unintended purposes, such as: IV extension tubing for epidurals, irrigation, drains, and central lines. Reducing or eliminating tube misconnections will require changes in equipment design and staff education.

The following are examples of reduction in misconnections:

- Do not purchase or use non-intravenous equipment that can connect with a female luer lock
- Always trace a tube or catheter from the patient to the point of origin before connecting to and device or infusion.
- Recheck connections and trace all patient tubes and catheters to the source upon the patients arrival to a new setting
- Always obtain a blood return upon flushing, connecting, and starting of any new cassette

Reporting Errors and Sentinel Events

Improving patient safety begins by promptly reporting errors, followed by analysis of the root cause and contributing factors, as well as development of a plan of action to prevent similar errors in the future. This is the best way health care organizations assess safe care delivery and determine how to improve safe care. It is an important factor to understand the sole responsibility of mistakes is the fault of individual practitioners. Campbell, (2007), reported 93 percent of physicians noted, doctors making medical errors should self-report, but less than half of them do. Instead of being able to analyze the factors contributing to errors, efforts have been to make the practitioner more careful, reinforcing the fear of punishment and not self-reporting.

Leap (2000) reported, when the fear of punishment is removed, reporting errors increases.

Joint Commission Reporting Requirement

Accredited healthcare organization must have at least two systems in place for reporting errors: internal system and external system. The mission of JCAHO is," to continuously improve patient safety and the quality of care provided," he facility must have a process in place to recognize sentinel events, conduct root cause analysis, and document strategies and action plans within 45 days of the organization becoming aware of the sentinel event. Therefore, Joint Commission defines a sentinel event as any unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof.

Joint Commission (2005), does not require reporting any sentinel event meeting the following criteria:

- Suicide of any individual receiving care, treatment, or services in a staffed around the clock care setting or within 72 hours of discharge
- Abduction of any individual receiving care, treatment, or services
- Unanticipated death of a full-term infant
- 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 syrgery or a procedure

Facilities are to report not only actual but also potential sentinel events, the near misses and close calls that can provide valuable learning opportunities for preventing future errors. JCAHO requires facilities to submit the findings of their root cause analysis and corrective action plan

within 45 days or the organization will be placed on accreditation watch. The accreditation watch is disclosed until the organization meets its requirements.

Root Cause Analysis

A **root cause analysis** is required by the JCAHO and a corrective action plan is performed for each sentinel event. It should be used as a tool for identifying strategies to prevent future errors. This process is put in place to build a culture of safety and move away from the culture of blame.

The goal of the root cause analysis (RCA) is to discover:

- What happened
- Why it happened
- What you should do to prevent it from happening again

The five following guidelines for an RCA must include:

- Root cause statements to include cause and effect
- Negative descriptions are not to be used in root cause statements
- Each human error has a preceding cause
- Violations of procedure are not root causes, but must have a preceding cause
- Failure to act is only a root cause when there is a pre-existing duty to act

Florida Law

Reporting of sentinel events are voluntary, the Florida law makes such reporting mandatory. Florida's Comprehensive Medical Malpractice reform Act of 1985 (F. S. 395.0197) mandates each licensed organization implement a risk-management program with state oversight and an internal incident-reporting system.

Accordingly, Florida hospitals and surgical centers must submit two types of reports to the Florida Agency for Healthcare Administration (ACHA). A **code 15 report** is defined as a report provided on each serious patient injury, the hospitals investigation of the injury, and whether the factors causing or resulting in the adverse incident represents a potential risk to other patient's.

Joint Commission National Patient Safety Goals

The JCAHO issued new mandatory goals and recommendations to improve patient safety in January 2008. Hospitals and other facilities will be evaluated by accreditation representatives to determine accreditation. Failure to comply and implement recommendations can result in loss of accreditation and federal funding.

In summary, although systems changes move slowly, nurses can be in control of change in their own department and facility. Being an advocate for patients can make a difference in their outcomes.

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