



MEDICAL ERRORS:

PREVENTION & ANALYSIS

FOR NURSING HOME ADMINISTRATORS AND NURSES

2009

A SELF-DIRECTED 2- HOUR COURSE DESIGNED TO MEET THE REQUIRMENTS OF:

- FLORIDA STATUTES 456.013 (7);
- SECTIONS 64B9-5.011 AND 64B10-11.0011 OF THE FLORIDA ADMINISTRATIVE CODE.



LEARNER OBJECTIVES

This self study course will prepare the participant to:

- Explain the role of prevention techniques in minimizing the risk of medical errors including the application of Failure Mode and Effects Analysis
- Describe the specific strategies to identify the fundamental causes of medical errors, including the appropriate use of root cause analysis
- Compare different medical error reporting systems and the characteristics of each; contrast with Florida's reporting requirements
- Identify the safety needs of special populations
- Express the impact of organizational systems on the occurrences of medical errors and patient outcomes
- Define the relationship between complex systems and error-prone conditions
- Identify resources for further study and for public awareness

This 2-hour self-directed course is designed to assist Florida's licensed Nursing Home Administrators and Nurses in meeting the statutory requirements of Florida Statutes 456.013 (7); as well as the regulatory requirements of the Florida Administrative Code, Sections 64B9-5.011 for Nurses and s. 64B10-11.0011 for Nursing Home Administrators.

Provider members of Florida Health Care Association are encouraged to contact any of the following staff members at the FHCA Headquarters at 1/850-224-3907 with questions pertaining to this or any related continuing education requirement.

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Florida Health Care Association would like to extend a special note of thanks to Pam Johnson, R.Ph., General Manager of PharMerica-Largo, for her contributions to the development of this course.

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MEDICAL ERRORS: *Prevention & Analysis*

Introduction - A Catalyst for Change

An explosive study by the Institute of Medicine (IOM) in 1999 reported that between 44,000 and 98,000 individuals die in hospitals each year due to medical errors that could have been prevented.¹ Even considering the lower approximation, this exceeds the persons who die annually from car accidents, breast cancer, and AIDS. The Institute of Medicine's report emphasized that medical errors are the result of systemic flaws rather than the negligence of individuals and made several ground-breaking recommendations to reduce the numbers of national medical errors by half in hospitals.

One of IOM's recommendations was to institute both state mandatory adverse incident reporting and voluntary adverse incident reporting processes. Hospitals were first in line in terms of the recommendations for improving patient safety but other health care organizations such as nursing homes and clinics were included in the study and slated for involvement in any national efforts. Explored later in more detail, in Florida, mandatory adverse incident reporting was initiated for nursing homes in 2001.

The Institute of Medicine recognizes that much can be learned from the analysis of errors. The IOM recommended to Congress that legislation be passed to extend peer review protection to data related to patient safety and quality improvement that are collected and analyzed by health care organizations for internal use or shared with others solely for purposes of improving safety and quality.

Fears about legal discoverability undercut motivations to detect and analyze errors to improve safety. Unless such data are assured protection, information about errors will continue to be hidden and errors will be repeated.²

¹ *To Err is Human: Building a Safer Health System*, Institute of Medicine report, 1999. WSJ 11/30/1999.

² *To Err is Human: Building a Safer Health System*, Institute of Medicine report, 1999. WSJ 11/30/1999, 10.

A History in Brief

The health care world had already been paying attention to medical errors. Organizations such as the American Medical Association, the American Nurses Association, the American Society of Hospital Pharmacists, and the American Society of Consultant Pharmacists initiated interdisciplinary discussions and created standards to achieve medical error reductions. The Joint Commission on Accreditation of Healthcare Organizations had been focusing on quality assurance in hospitals; nursing colleges highlighted the “5 Rights” and “Check 3-Times” to ensure medication administration safety. Then, in 1987, the Centers for Medicare and Medicaid Services introduced OBRA regulations which included attention to medical errors in terms of the utilization of unnecessary drugs and psychoactive drugs in long term care facilities. Sentinel events, adverse incidents, and continuous quality improvement were discussed at meetings in the 1990’s and the American public began to be more aware of the importance of being more participatory in their health care and in the health care of their loved ones. While concern about medical errors is not new, it did not receive the attention it deserved until the aforementioned 1999 Institute of Medicine report. When errors are introduced into the health care system, outcomes are very serious, often affecting the life and well-being of human beings. Consequently, our health care system has developed a zero-tolerance, punitive policy toward medical errors. However, if the goal is to reduce medical errors, the assignment of guilt is less valuable than the discovery of system flaws and process failures.

Complexities in Health Care: A Risky Proposition

Errors in health care are somewhat different from errors or accidents in other fields. In other industries, it is usually the worker and the company which is directly affected by an error. In health care, it is usually a third party, the patient, who is harmed. Furthermore, typically only one patient is injured at a time rather than whole groups of people. This makes health care errors less visible.

Errors are more likely to occur within complex systems rather than simple systems. Complex systems contain many components which are always interacting with other components within the system. In a complex system, multiple parts serve multiple functions and the failure of one part creates failure for all connected components. Long term care meets the definition of a complex system with a high degree of compartmentalized specialization, the flow of indirect information, and limited options of substituting other staff or means. In contrast, simple, or linear systems, contain interactions that are expected to occur in a familiar production sequence. In the linear model, one thing occurs before the next with little specialization and minimal damage if failure occurs. Recognizing that the risk of errors are inherent to long term care, legislators, state and federal government policy makers, owners, administrators, directors of nursing, and quality assurance committees must commit to adequate reimbursement streams, reasonable and supportive investigatory practices, good managerial decisions, the provision of right and well-maintained equipment, a skilled workforce, appropriate work schedules, well-designed job functions, and clear guidelines regarding desired and undesired performance. As a health care professional, your goal is to help create systems which make it difficult for errors to occur.

Florida's Response to Patient Safety Concerns

Given that Florida is the oldest state in the nation with almost *one-quarter* of its residents over 60 years of age and, according to one study, patients aged 65 and older experience medical injury two to four times as often as patients in age groups under the age of 45³, health care professionals and policy makers have reason to be concerned about the consequences of medical errors. In 2001, the Florida Legislature passed language that required all health care professionals licensed through Chapter 456, F.S. to receive continuing education on medical errors. In May 2003, a rule was adopted by the Board of Nursing to require Certified Nursing Assistants to receive, as part of new biennium requirements, in-service training on the topic of preventing medical errors, 64B9-15.011, FAC. Recognizing risk management's role in medical error prevention and patient safety, the Legislature also instituted a requirement for Risk Management and Quality Assurance Programs to be initiated in all Florida's nursing homes.

Florida's Healthcare Licensee Statute and Rule

All Dept. of Health licensees

456.013 Department; general licensing provisions.—

(7) The boards, or the department when there is no board, shall require the completion of a 2-hour course relating to prevention of medical errors as part of the licensure and renewal process. The 2-hour course shall count towards the total number of continuing education hours required for the profession. The course shall be approved by the board or department, as appropriate, and shall include a study of root-cause analysis, error reduction and prevention, and patient safety. In addition, the course approved by the Board of Medicine and the Board of Osteopathic Medicine shall include information relating to the five most misdiagnosed conditions during the previous biennium, as determined by the board. If the course is being offered by a facility licensed pursuant to chapter 395 for its employees, the board may approve up to 1 hour of the 2-hour course to be specifically related to error reduction and prevention methods used in that facility.

Nurses: 64B9-5.011, FAC. Continuing Education on Prevention of Medical Errors.

(1) All licensees must complete a two hour course on prevention of medical errors, which meets the criteria of Section 456.013, F.S., as part of the total hours of continuing education required for initial licensure and biennial renewal.

(2) To receive Board approval, each course on prevention of medical errors shall consist of a minimum of at least two (2) hours of classroom or an equivalent home study program and shall include at a minimum the following subject areas:

- (a) Factors that impact the occurrence of medical errors,
- (b) Recognizing error-prone situations,
- (c) Processes to improve patient outcomes,
- (d) Responsibilities for reporting,
- (e) Safety needs of special populations,
- (f) Public education.

Specific Authority 456.013(7) FS. Law Implemented 456.013(7) FS. History--New 5-2-02.

³ *Patients, Doctors, and Lawyers: Medical Injury, Malpractice Litigation, and Patient Compensation in New York.* The Report of the Harvard Medical Practice Study to the State of New York. Harvard Medical Practice Study, 1990.

Nursing Home Administrators: 64B10-11.011, FAC. Mandatory HIV/AIDS and Prevention of Medical Errors Education.

(1) Each licensee shall be required to complete no later than upon first renewal a Board-approved course on human immunodeficiency virus and acquired immune deficiency syndrome (HIV/AIDS). To receive Board-approval, courses on HIV/AIDS shall consist of one hour of instruction, which shall be approved by any board within the Department of Health's Medical Quality Assurance.

(2) Each applicant as a condition of initial licensure and each licensee as part of the renewal process shall complete a Board-approved two-hour course on the prevention of medical errors, which must contain the following components: root cause analysis; error reduction; prevention and patient safety.

Specific Authority 456.013(7), 456.033, 468.1685(1) FS. Law Implemented 456.013(7), 456.033(1) FS. History-New 8-30-05, Amended 3-18-09.

Comprehensive Patient Safety Programs

The Institute of Medicine's Committee on Data Standards for Patient Safety surmises that, because patient safety is a key part of the delivery of quality care, health care settings should establish comprehensive patient safety programs.⁴ Comprehensive Patient Safety Programs (or *Resident Safety Programs*) focus on prevention.

According to the IOM, Patient Safety Programs share these key cultural elements:

1. a shared belief that although health care is a high-risk undertaking, delivery processes can be designed to prevent failures and harm to participants
 - a. commitment to anticipating hazards and errors
 - b. expertise to design processes to avoid failures or mitigate resident harm if a failure does occur
 - c. an underlying awareness of patient safety during the routine recruitment and training systems
 - i. understanding that knowledge and skills are the cornerstone for any patient safety program
 - ii. competence must be actively maintained
 - iii. staff training should be provided at all levels related to resident safety, including the facility's patient (or resident) safety program
2. an organizational commitment to detecting and analyzing patient injuries and near misses
 - a. actively monitoring residents and conduct record reviews with a focus toward clinical triggers
 - b. through the facility's Risk Management and Quality Assurance program, routinely conduct facility self-assessments to identify error-prone or high-risk processes that could jeopardize resident safety
 - c. uniform, easy to understand process for voluntary reporting potential adverse events and near-misses
3. an environment that balances the need for reporting of events and the need to take disciplinary action
 - a. If information to support a learning environment is to be collected, employees must be willing to report adverse events and near misses without threat of retribution. On the other hand, a totally blame-free environment is not acceptable.
 - b. Protection is not granted for criminal behavior, active malfeasance, or cases in which an event is not reported in a timely manner

In August 2008, the Centers for Medicare and Medicaid Services began work on the QIO Program's 9th Statement of Work (SOW), which extends through July 31, 2011. One of the main sections of this latest SOW focuses on Patient Safety, specifically the reduction of 1) health care-associated MRSA infections; 2) reducing rates of pressure ulcers in nursing homes and hospitals; 3) reducing rates of physical restraint use in nursing homes; 4) improving inpatient surgical

⁴ Patient Safety: Achieving a New Standard for Care, Institute of Medicine, 2004.

safety and heart failure treatment in hospitals; 5) improving drug safety; and 6) providing quality improvement technical assistance to Nursing Homes in Need (special focus facilities).

In response to CMS's 9th Scope of Work, the Medicare Quality Improvement Community (MedQIC) Web site, a free on-line resource for quality improvement interventions, has updated their toolkits, presentations, and links to reflect the new patient safety goals. This includes a link to a new survey tool developed by the Agency for Healthcare Research and Quality to assess a nursing home's patient safety culture.

Reporting Systems

Reporting Systems – Characteristics & Roles

Reporting systems may focus on either *accountability* or *safety improvement*. Both are crucial to preventing medical errors. Characteristics of these two types of systems are:

Characteristics	
Accountability Reporting Systems	Safety Improvement Reporting Systems
Mandatory	Voluntary
Serious preventable harm/death	Less serious harm or no serious harm (near misses)
Reports come from organizations	Reports come from frontline caregiver and/or organizations
Release Information to the Public	Confidential

These two different types of reporting systems play different roles and yield different results:

Roles	
Accountability Reporting Systems	Safety Improvement Reporting Systems
Public Accountability	Internal
Discover Lax Standards of Practice	Confidential
Public disclosure of unsafe practices or practitioners	Utilized to yield information that will improve patient safety through Root Cause Analysis
Typically, no protection from liability	Protection from disclosure for legal liability

Florida’s Risk Management and Quality Assurance Program Reporting System

Florida’s Risk Management and Quality Assurance Program Reporting System combine elements from both the Accountability system and the Safety Improvement system:

Florida’s Reporting System for Nursing Homes	
Characteristics	System
Mandatory Reporting of serious preventable harm/death	Accountability
Mandatory Reporting of less serious harm or no serious harm that were or were not preventable (i.e. abuse, neglect, or exploitation)	Accountability
Reports come from organizations	Accountability
Reports may be initiated by frontline caregiver to facility Risk Manager	Safety Improvement
May result in punitive measures from the regulatory body, Agency for Health Care Administration	Accountability
May release information to the regulatory licensure boards if necessary for disciplinary proceedings against a practitioner, 456.073.	Accountability
Confidential as provided by law and is not discoverable or admissible in any civil or administrative action.	Safety Improvement

Reporting Requirements in Florida

There are three categories of reportable events for nursing homes in Florida:

- I. Abuse, Neglect, and Exploitation
- II. Avoidable Event w/Certain Outcomes
- III. Resident Elopement w/Certain Conditions

I Abuse, Neglect, and Exploitation

Confirmed or suspected abuse, neglect, or exploitation must be reported to the Agency for Health Care Administration and the Nursing Home Administrator as required by 42 C.F.R. s. 483.13(c) and to the Department of Children and Families of as required by chapters 39 and 415 (see s. 400.147 (9), F.S.).

II Avoidable Event w/ Certain Outcomes

The second category of reportable event is the adverse incidents as defined in s. 400.147 5(a), F.S. and has two interdependent criteria, both of which must be met in order for the event to be reportable. The first criterion describes the type of event which must occur:

“An event over which facility personnel could exercise control and which is associated in whole or in part with the facility’s intervention, rather than the condition for which such intervention occurred.”

When an incident occurs, the Risk Manager or his designee must be notified within 3 business days. The Risk Manager will investigate and determine whether or not the event meets the first criterion.

The second criterion describes the outcome, s. 400.147, Florida Statutes 5(a):

1. Death;
2. Brain or spinal damage;
3. Permanent disfigurement;
4. Fracture or dislocation of bones or joints;
5. A limitation of neurological, physical, or sensory function;
6. Any condition that required medical attention to which the resident has not given his or her informed consent, including failure to honor advanced directives; or
7. Any condition that required the transfer of the resident, within or outside the facility, to a unit providing a more acute level of care due to the adverse incident, rather than the resident's condition prior to the adverse incident;
8. An event that is reported to law enforcement or its personnel for investigation; or

The Risk Manager will investigate and determine whether or not the event meets this second criterion. The Risk Manager has three courses of action he/she may make:

- Do not report; the event does not meet both criteria.
- Report; criteria must be further analyzed to determine if both are fulfilled.
- Report; the event does meet the criteria of an adverse incident.

DO NOT REPORT; THE EVENT DOES NOT MEET BOTH CRITERIA.

If the Risk Manager determines that the event does not meet the criteria of an adverse event which is reportable to the Agency for Health Care Administration, he/she should still incorporate the incident into the facility's internal Quality Assurance Committee during its quarterly meeting. The committee should categorize the incident and do a "Root Cause Analysis" to determine how the incident occurred and how to prevent a reoccurrence. As part of the facility's Quality Assurance Program, these incident reports and work papers are confidential and do not have to be provided to surveyors. However, surveyors will need to see evidence of the incident reporting, categorization, and investigation. In other words, surveyors want to see systems and procedures in place that support appropriate prevention of and reaction to medical errors.

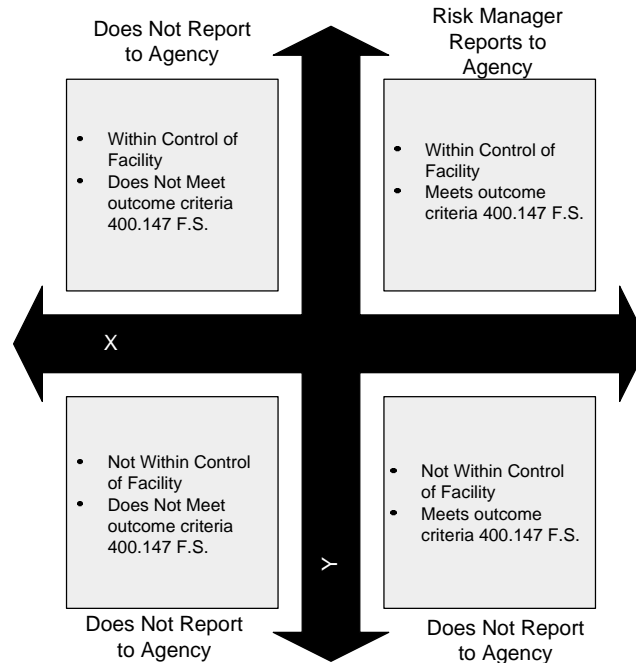
REPORT; CRITERIA MUST BE FURTHER ANALYZED TO DETERMINE IF BOTH ARE FULFILLED.

If the Risk Manager is unable to complete his/her investigation and make a decision regarding an event within 24 hours, he/she will submit an incident report (AHCA Form 3110-0009) to the Agency for Health Care Administration and then will follow up within 15 calendar days (AHCA Form 3110-0010) of the incident date with a second submission which will signify whether or not the incident met the criteria of being an adverse incident; that is, preventable, *and* with an outcome as described.

REPORT; THE EVENT DOES MEET THE CRITERIA OF AN ADVERSE INCIDENT.

If the Risk Manager determines that the event meets both criteria, he/she will report it to the Agency for Health Care Administration within 1 business day of being notified of the event (AHCA Form 3110-0009) and will need to submit a more comprehensive report within 15 calendar days of the incident (AHCA Form 3110-0010).

Adverse Incident Reporting s. 400.147, Florida Statutes 5(a) & (b):



Category III Resident Elopement, s. 400.147, Florida Statutes 5(b):

“Resident elopement, if the elopement places the resident at risk of harm or injury”.

Resident elopement – under the stated condition above – is reportable regardless of the facility’s exercise of control.

Reporting In Summary

Florida’s mandatory adverse incident reporting requirements are more sweeping than recommended by the Institute of Medicine; however, adverse incident reports are confidential as provided by law and are not discoverable or admissible in any civil or administrative action, except in disciplinary proceedings by the agency or the appropriate regulatory board. s. 400.147 (8)(d), F.S. While somewhat helpful, this statutory provision does not go far enough in giving the health care practitioner enough protection from Board discipline to encourage their reporting of near-misses.

Medical Errors

Medical Errors – A Working Definition

What are Medical Errors? They are not the same thing as medication errors.

Institute of Medicine: The failure of a planned action to be completed as intended; or the use of a wrong plan to achieve an aim.

Agency for Healthcare Research & Policy: Medical errors happen when something that was planned as a part of medical care doesn't work out, or when the wrong plan was used in the first place.

According to the Institute of Medicine, an “Adverse Event” is an injury resulting from a medical intervention and is not due to the patient’s underlying condition. Not all adverse events are attributable to errors.

While all adverse events result from medical management, not all are preventable (i.e. not all are attributable to errors). For example if a patient has surgery and dies from pneumonia he or she got postoperatively, it is an adverse event...the analysis may conclude that no error occurred and the patient would be presumed to have had a difficult surgery and recovery (not a preventable adverse event).⁵

All adverse events must be investigated in order to determine whether or not they were preventable adverse events. Preventable adverse incidents are medical errors.

General Types of Errors	
<p>Diagnostic:</p> <ul style="list-style-type: none"> • Error or delay in diagnosis • Failure to employ indicated tests • Use of outmoded tests or therapy • Failure to act on results of monitoring or testing 	<p>Treatment:</p> <ul style="list-style-type: none"> • Error in the performance of an operation, procedure, or test • Error in administering the treatment • Error in the dose or method of using a drug • Avoidable delay in treatment or in responding to an abnormal test • Inappropriate (not indicated) care
<p>Preventative:</p> <ul style="list-style-type: none"> • Failure to provide prophylactic treatment • Inadequate monitoring of follow-up of treatment 	<p>Other:</p> <ul style="list-style-type: none"> • Failure of communication • Equipment failure • Other system failure
<p>Source: Leape, Lucian; Lawthers, Ann G; Brennan, Troyen A. et al. Preventing Medical Injury. Qual Rev Bull. 19(5):144-149, 1993.</p>	

⁵ *To Err is Human: Building a Safer Health System*, Institute of Medicine report, 1999. WSJ 11/30/1999, 4.

Reducing Medical Errors

There are two primary components of medical error reduction:

PREVENTION	REACTION
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PREVENTION TECHNIQUES attempt to ascertain ahead of time what system flaws might lead to a medical error; this might be especially relevant when a nursing home interdisciplinary team is deciding whether or not to take a new type of patient with heavy care needs outside of their normal resident profile. Processes such as **Failure Mode and Effects Analysis** can guide error-prevention efforts. This is the purpose of patient safety programs.

REACTION TECHNIQUES are specific strategies that are implemented once an error has occurred. This **Root Cause Analysis** is a reactive course of action, utilized after an error occurs, to identify its fundamental cause. Root Cause Analysis is also useful when analyzing *near misses*. The goal of the Root Cause Analysis is to minimize a negative outcome and to avoid reoccurrence.

Through committed leadership, both preventative and reactive techniques should be integrated into a facility’s existing Risk Management and Quality Assurance Programs ensuring continuous quality improvement in achieving not just regulatory compliance, but the satisfaction of residents, their family and friends, and staff.

PREVENTION

Failure Mode, Effects, & Criticality Analysis

“Failure Mode, Effects & Criticality Analysis” (FMECA) was developed in the aerospace industry to prevent errors which usually have serious life and death as well as economic consequences. Healthcare, and even long term care, can modify FMECA to work in identifying potential errors before they occur.

FMECA Phases	Description
Potential Failure Modes	Weaknesses in a system, i.e. admission of a new resident with incomplete medical information
Potential Effect on Patient	How seriously would the lack of complete medical information impact the new resident?
Criticality of Failure Mode (on patient)	If an error occurred because of the lack of complete medical information, how critical would it be in terms of affecting the resident: High, Medium, Low

A CASE STUDY – PUTTING FAILURE MODE, EFFECTS & CRITICALITY TO WORK

FMECA can be worked into an interdisciplinary care team meeting. To cite one example, consider a care team meeting convened to discuss the admission of a new resident who has a tracheotomy tube. Mr. Jones is currently in a well-known hospital that is currently seeking to discharge him to a facility. The Administrator at Harmony Home Nursing Center would like to accept the resident, particularly because it would mean building a good relationship with the hospital. However, the Administrator is concerned because Harmony Home Nursing Center has never had a resident who required tracheotomy care. During the interdisciplinary care team meeting, the Administrator is going to use the *5 Steps of Failure Mode, Effects & Criticality Analysis* to drive his decision regarding the resident.

STEP 1 – THE EXPLORATION: Explore where the resident is coming from; advanced directives, and family situations. Research the clinical requirements for the care of a tracheotomy patient. Is there a family expectation that Mr. Jones will thrive? Discuss the medications Mr. Jones is taking, route of administration, and whether there are co-morbidities. Is the tracheotomy tube expected to be a long term or short term treatment?

STEP 2 – THE FAILURE MODES: Identify where and how systems might fail. Does Mr. Jones have conflicting orders from family members and/or the physician? Is anyone examining medication types and interactions? Your research has shown that tracheotomy patients require management of the tracheotomy wound and the airway device. Further, the patient has to be suctioned as often as necessary to remove secretion. Sterile techniques must be maintained and Kelly clamps are kept at the bedside in case of an emergency. Who on staff is experienced with tracheotomy patients? Who on staff would need specialized training? Which staff person would be in charge of care on each shift and overall? Are there any behavioral issues that would complicate care? Does Harmony Home Nursing Center’s physical environment accommodate the equipment needed? Is tracheotomy replacement equipment readily available? Is there an involved physician? Is the clinical care difficult or time-consuming? Has the acuity on the unit been evaluated; are the staff assignments acuity based? Is there a nutritional risk? Is Mr. Jones expected to improve or to decline and does the family already know what to expect? Step 2 may also be thought of in terms of where the Root Causes of an error might exist.

STEP 3 – CRITICALITY: Determine the likelihood of a mistake and the potential consequence (effect) to Mr. Jones. If the tracheotomy tube is not properly maintained one time, what is the outcome for the resident? If Mr. Jones misses a single suctioning, or not suctioned properly or at the appropriate time, what is the outcome for him? If the physician and/or family members disagree about end-of-life care, what is the outcome for Mr. Jones and the facility? In each case, examine whether or not the criticality of errors is high, medium, or low with high being the most serious or life-threatening.

STEP 4 – USE WHAT YOU HAVE: Staff now identifies existing processes in place that would help detect an error before it occurs. Staff also will evaluate the effectiveness of existing processes and whether or not they can be improved. Human factors should be considered as well: “There’s already a policy and procedure for checking other equipment, so could we adapt that for this new tracheostomy tube. Nurse Smith is in charge of that maintenance schedule and all the CNAs seem to know it pretty well, so it seems to be working; we’ve never had a report of a problem with equipment maintenance anyway.” “We have a policy & procedure for the med-pass. I know there’s been a couple of missed meds, but nothing too serious. Nurse McKinley put a double check system in place and it seems to be working okay now. Plus, Pharmacy provides ongoing MARS checks, too, with patient reviews.”

STEP 5 – STRATEGIES: *If failure modes could cause errors with significant consequences and Mr. Jones is scheduled for admission, actions are taken now to prevent the errors, detect them before they reach Mr. Jones, or minimize the consequence if an error does occur.* For example, follow through on family education regarding expectations and advanced directives. Obtain a comprehensive medications list. Write new policies or adapt existing policies for staff on new equipment maintenance and tracheotomy care. Staff members are assigned to plan, supervise, and deliver care; training is scheduled along with demonstrations of competency. Staff training will include being alert to signs of improper or untimely suctioning. If it is appropriate, set up a “Plan B” if suctioning is performed late or improperly. If there is no negative outcome, this “near miss” would be important to report to the Risk Manager for quickly following up with staff training and demonstration competencies as well as Risk Management and Quality Assurance Program reviews.

GENERAL PREVENTION TECHNIQUES

<ul style="list-style-type: none"> ▪ Standardize & Streamline to remove opportunities for error – Utilize the great policies you may already have! ▪ Differentiate – Use visual cues (colors, warning signs), and separate things that could be interchanged in error ▪ Use technology if it works for you. ▪ Reduce reliance on memory; when in doubt look it up. ▪ Simplify: Make doing the right thing EASY. 	<ul style="list-style-type: none"> ▪ Improve communications – avoid verbal orders, non-metric system, and abbreviations ▪ Follow your tried and true guidelines, standards, checklists ▪ Strictly limit access to highly vulnerable processes with potentially catastrophic consequences ▪ Train, educate, and test: Then start over again.
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REACTION

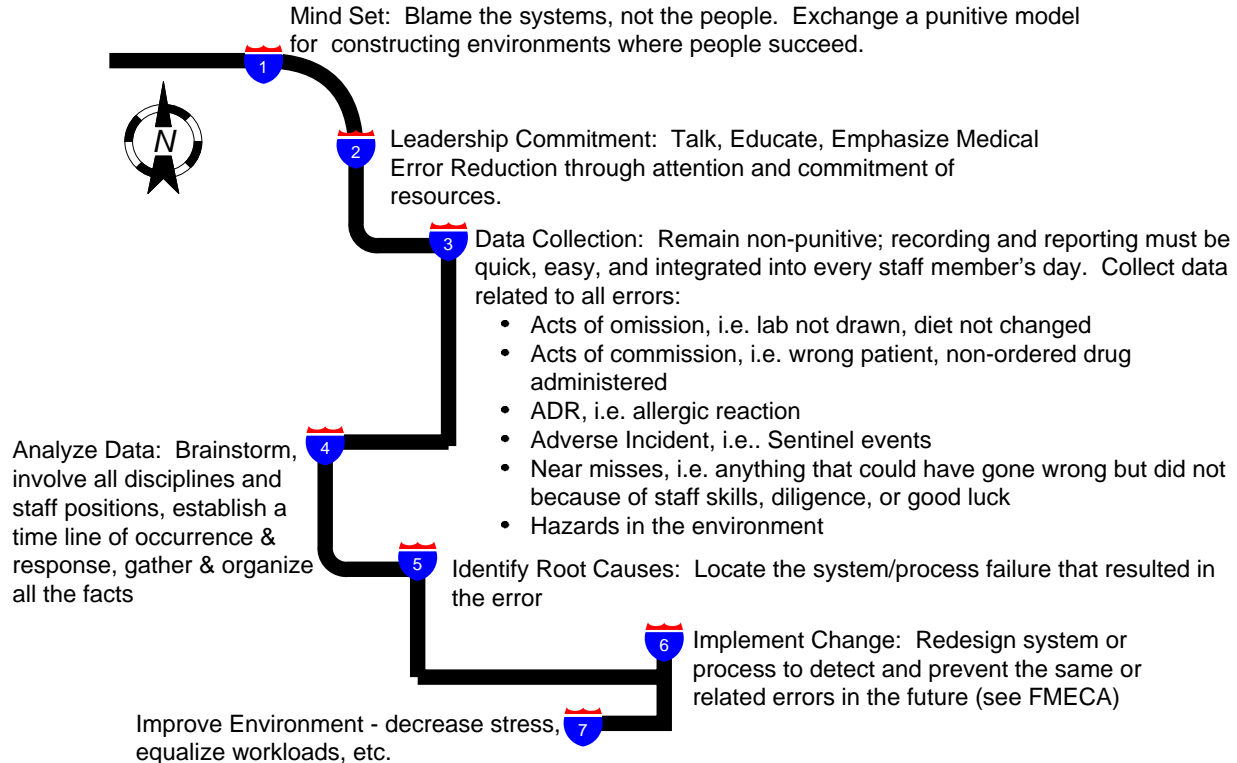
Root Cause Analysis

Root cause analysis is a process for detecting the fundamental or contributory factors that bring about deviation in performance after the event occurs, including the occurrence or possible occurrence of a preventable adverse incident. A root cause analysis concentrates chiefly on systems and processes, not individual functioning. The goal is to move through both clinical processes and organizational processes looking for areas of improvement that will decrease the likelihood of the same type of adverse incident occurring in the future.

The outcome of the root cause analysis is an “action plan” that outlines the strategies that the organization will initiate in order to reduce the likelihood of similar incidents happening again in the future. Such an action plan should address:

- Responsibility for initiation
- Supervision
- Testing, if needed
- Time frames
- Techniques for measuring the effectiveness of the plan’s outcomes

ROAD MAP TO REDUCING MEDICAL ERRORS & IMPROVING SAFETY



ACTIVE VS. LATENT

One of the most commonly cited classification of human error in medical literature is based on the work of James Reason. Reason describes two categories of error: Active error and Latent error.⁶

Characteristics of Active Errors	Characteristics of Latent Errors
Occur at the level of the frontline staff	Removed from the direct control of frontline staff
Effects are felt instantly	Include poor system or space design, incorrect installation, faulty maintenance, poor management decisions, inefficient organizational structures
Often called the “sharp end”	Often referred to as the “blunt end”

An active error would be the nurse, during one treatment, repeatedly tried to reinsert the Gastrostomy Tube (GT, PEG) into the resident’s navel mistaking the navel for the surgical opening in the stomach causing the resident pain. The latent error could possibly be connected to management issues, work environment, team factors, or staff factors. Latent errors are more dangerous because, being systemic and often invisible; they can lead to multiple active errors.

SYSTEM BREAKDOWN SYMPTOMS

These are symptoms of flawed systems in the healthcare setting that can lead to errors:

Interruptions, Crowding, Stress causing excessive cognitive workload	Climate Extremes
Inadequate orientation for staff:residents	Lack of education or training
Lack of competency demonstrations or practice	Communication or language barriers
Illegible or incomplete penmanship or labeling	Overworked, insufficient, or overtired staff
Maintenance failures, inc. failed locks & equipment	Ineffective or inaccurate policies & procedures
Ineffective or inadequate leadership	Clutter & disorganization; poor workflow design

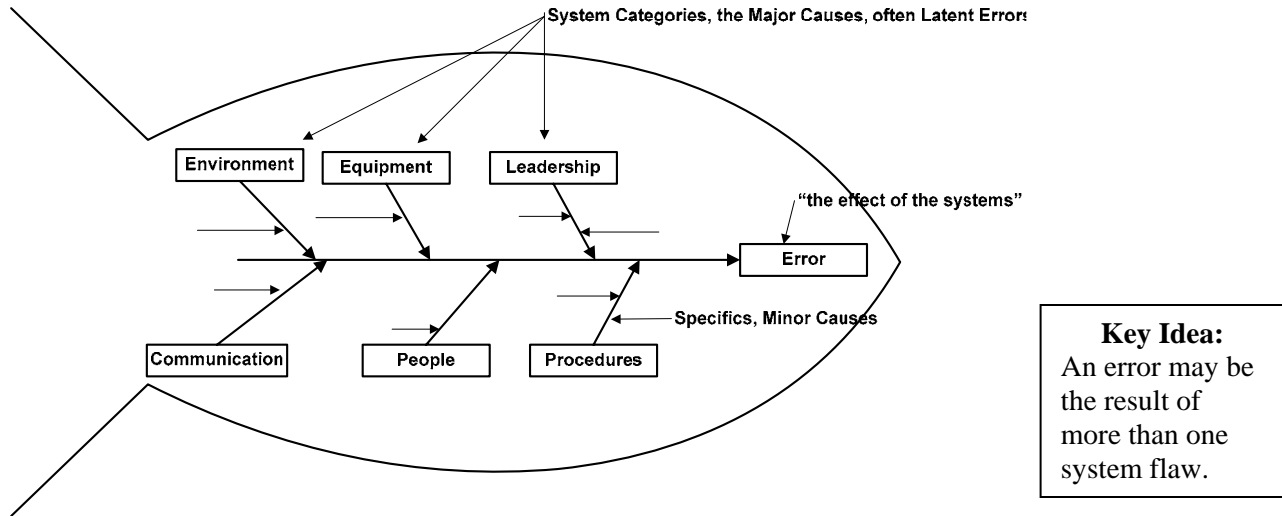
⁶ Reason JT. *Human Error*. New York: Cambridge Univ Press. 1990.

Latent System Failures may be categorized:

- Environment
- Leadership
- People
- Equipment
- Communication
- Procedures

CAUSE & EFFECT DIAGRAM

A standardized template, like the Ishikawa tree diagram may be helpful in directing the process of identifying causes:



Karou Ishikawa developed this fishbone-like diagram to explore cause-and-effect relationships. The fishbone explores collections of causes.

- First Step: Define the Error = the effect of system flaws; the outcome; sometimes referred to as the “Gap” in what happened and what should have happened.
- Second Step: Define the main causes of the error; these are the systems at the tips of the main lines; categories representing major systemic causes (ex. Equipment).
- Third Step: Detail the specifics. Place these on the smaller lines on the appropriate system lines; these are your minor causes.

The Environment specific could be *nursing home at shift change*. An Equipment specific could be *fax machine*. Communication could be *pharmacy-nursing*; or *nurse-nurse*; or *physician-nurse*.

Ishikawa Diagram - Consider this:

Error or Event: Controlled drugs were diverted from the Emergency Kit

Minor Cause: It was hot in the med room so the nurses propped the door open at shift change and forgot to lock it again.

System: Environmental; climate extremes

Conducting a Root Cause Analysis

The Agency for Healthcare Research and Quality contracted a study with the University of California and Stanford University to collect and critically review the existing evidence on practices relevant to improving patient safety. *Making Health Care Safer: A Critical Analysis of Patient Safety Practices*⁷ provides guidance on root cause analysis and concludes with a bit of caution. The study asserts that to be credible, root cause analysis must be a multidisciplinary process whereby several staff members who are acquainted with the process serve as a check and balance for the investigation, hopefully arriving at similar conclusions.

Error analysis has two major parts with specified goals (or tasks) and actions.

1. DATA COLLECTION

GOAL. Generate a timeline or a sequence of events including preceding and subsequent happenings which occurred before and after the error.

HOW-TO ACTION:

- I. Establish what happened
 - a. Structured interviews
 - b. Document review
 - c. Field observation

2. DATA ANALYSIS

GOAL. Determine the underlying factors that caused or contributed to the error.

HOW-TO ACTION:

- I. Examine the sequence of events generated in Task #1
 - a. Establish how the error happened by identifying all active failures in the sequence of events
 - b. Establish how the error happened by identifying all latent failures in the sequence of events.

⁷ Wald, H., & Shojania, K. (2001). University of California, Stanford University Evidence-based Practice Center, Root Cause Analysis. In *Making Health Care Safer: A Critical Analysis of Patient Safety Practices* (AHRQ Publication No. 01-E058, pp. 51-55). Washington, DC: U.S. Department of Health and Human Services.

WHY – THE ALL-PURPOSE PROBE

Root Cause Analysis and the Ishikawa diagram benefit from asking “why” repeatedly. In an example taken from manufacturing:

- Question #1: Why did the machine stop?
Answer: There was an overload and the fuse blew.
- Question #2: Why was there an overload?
Answer: The bearing was not sufficiently lubricated.
- Question #3: Why was it not lubricated sufficiently?
Answer: The lubrication pump was worn and rattling.
- Question #4: Why was it not pumping correctly?
Answer: The shaft of the pump was worn out.
- Question #5: Why was the shaft of the pump worn out?
Answer: There was no strainer attached and metal scrap got in.

The number of questions asked by risk managers or administrators is not important; the point is that the root cause of an error be discovered. The “why” principle can help uncover both active and latent causes.

WORDS OF CAUTION

The Agency for Healthcare Research and Quality’s study cautions against overuse or incorrect use of root cause analysis⁸:

The potential for harm with the use of RCA has received only passing mention in the literature, but might result from flawed analysis⁹. The costs of pursuing absolute safety may be the implementation of increasingly complex and expensive safeguards, which in themselves are prone to system failures^{10, 11}. Ill conceived RCAs which result in little effective systems improvement could also dampen enthusiasm for the entire quality improvement process. Arguably the harm caused by pursuit of incorrect root causes must be offset by the costs of not pursuing them at all.

If a long term care facility’s Quality Assurance Committee identifies error trends of a non-harmful, homogenous nature, it would not be efficient to conduct root cause analysis for each and every error, but rather, it should be sufficient to isolate the flawed system(s) or design(s) triggering the similar errors.

⁸ Wald, H., & Shojania, K, p.54.

⁹ Hofer TP, Kerr EA. *What is an error?* Eff Clin Pract. 2000;3:261-269.

¹⁰ Reason, 1990.

¹¹ Perrow C. *Normal Accident: Living with High-Risk Technologies. With a New Afterword and a Postscript on the Y2K Problem.* Princeton, NH: Princeton University Press. 1999.

INDIVIDUAL ACCOUNTABILITY

As we have seen, Medical Error Reduction depends heavily on systems; however, **individual accountability remains of key importance** in taking ownership for roles and responsibilities. It is this reasoning that causes some organizations to resist the term “a blame-free culture”. There will be times when truly incompetent people must be removed from a system. There may be chemical or mental issues at hand or other concerns that may make people unsafe to practice within the best of systems. *Remove true incompetence.*

Medication Errors

Medication Errors

Medication Errors are a specific subset of Medical Errors. Medication Errors are often termed *Adverse Drug Events*. In a clinical study involving long term care¹², ADE's were found to occur at the rate of 1.9 events per 100 resident-months. Half of these were found to be preventable. The drugs most involved in ADE's were antipsychotics, antibiotics, antidepressants, and sedatives/hypnotics. Further, among the *preventable* ADE's, psychoactive medication and anticoagulants were the most common drugs involved. It is important to note that, within certain error categories, the largest error type was in ordering/prescribing and monitoring (70%) while administration (.3%) and dispensing (.5%) represented the smallest portion of the errors. The categories of transcription errors occurred at 6% and involve the physical writing down of prescriptions and recording. Monitoring errors refer to the laboratory monitoring of drug therapies or signs/symptoms of a drug's toxicity.

NEAR MISSES

A near miss is an error which does not result in serious harm. The Institute of Medicine describes near misses:

A near miss is defined as an act of commission or omission that could have harmed the patient but did not do so as a result of chance (e.g., the patient received a contraindicated drug but did not experience an adverse drug reaction), prevention (e.g., a potentially lethal over-dose was prescribed, but a nurse identified the error before administering the medication), or mitigation (e.g., a lethal drug overdose was administered but discovered early and countered with an antidote).

ELECTRONIC HEALTH RECORDS

As more health care providers move toward electronic health records for their patients and residents as a way to manage increasingly complex co-morbidities and medication interactions. The National Academy of Sciences IOM Committee on Data Standards for Patient Safety has identified core functionalities an EHR system should include.

Core EHR Functions:

- Health information and data
- Patient support
- Results management
- Administrative processes
- Order entry/management
- Reporting & population health
- Decision support management
- Electronic communication and connectivity

More information on these core functions is available for download at no cost from the National Academies Press website http://www.nap.edu/catalog.php?record_id=10781.

¹² Gurwitz JH, Field TS, Avorn J, et al. *Incidence and preventability of adverse drug events in nursing homes*. Am J Med 2000; 109(2):87-94.

CATEGORIES OF MEDICATION ERRORS¹³

Omission Error. The failure to administer an ordered dose to a resident by the time the next dose is due, assuming there has been no prescribing error. Exceptions would include a resident's refusal to take the medication and failure to administer the dose because of recognized contraindications.

Unauthorized Drug Error. The administration of a medication to a resident for which the physician did not write an order. This category includes a dose given to the wrong resident, dose given that was not ordered, administration of the wrong drug or a discontinued drug, and doses given outside a stated set of clinical parameters or protocols.

Extra Dose Error. The administration of duplicate doses to a resident or administration of one or more dosage units in addition to those that were ordered. May include administration of a medication dose after the order was discontinued (could also be considered Unauthorized Drug Error).

Wrong Dose Error. When the resident receives an amount of medication that is greater than or less than the amount ordered by the prescriber.

Wrong Route Error. The administration of a medication to a resident by a route other than that ordered by the physician or doses administered via the correct route but at the wrong site (e.g., left eye instead of right eye).

Wrong Rate Error. The incorrect rate of administration of a medication to a resident. May occur with intravenous fluids or liquid enteral products.

Wrong Dosage Form Error. The administration of a medication in a dosage form different from the one that was ordered by the prescriber. This could include crushing a tablet prior to administration without an order from the prescriber.

Wrong Time Error. The failure to administer a medication to a resident within a predefined interval from its scheduled administration time. This interval should be established by each facility and clearly stated in the facility's policies. Different intervals may be established for different drugs or drug classes, based on the therapeutic importance of dosing.

Wrong Drug Preparation Error. A medication incorrectly formulated or manipulated before administration, such as incorrect or inaccurate dilution or reconstitution, failure to shake suspensions, crushing medications that should not be crushed, mixing drugs that are physically or chemically incompatible, and inadequate product packaging.

13 Feinberg, JL, ed. Med Pass Survey. A Continuous Quality Improvement Approach. ASCP 1993.

Wrong Administration Technique Error. Use of an inappropriate procedure or improper technique in the administration of a drug. Examples of wrong technique errors include incorrect manipulation of inhalers, failure to maintain sanitary technique with medications, not wiping an injection site with alcohol, failure to use proper technique when crushing medications, failure to check nasogastric tube placement or flushing NG tube before and after administration of medication, failure to wash hands or improper hand washing technique used.

Deteriorated Drug Error. Administration of a medication when the physical or chemical integrity of the dosage form has been compromised, such as expired medications, medications not properly stored, or medications requiring refrigeration that are left out at room temperature.

Prescribing Error. The inappropriate selection of a drug (based on indication, contraindications, known allergies, existing drug therapy, and other factors); dose; dosage form; quantity; route of administration; concentration; rate of administration; or inappropriate or inadequate instructions for use of a medication ordered by a physician or other authorized prescriber.

Dispensing Error. The failure to dispense a medication upon physician order (omission error) or within a specified period of time from receipt of the medication order or reorder (time error); dispensing the incorrect drug, dose, dosage form; failure to dispense correct amount of medication; inappropriate, incorrect, or inadequate labeling of medication; incorrect or inappropriate preparation, packaging, or storage of medication prior to dispensing; dispensing of expired, improperly stored, or physically or chemically compromised medications.

Monitoring Error. Failure to review a prescribed regimen for appropriateness, or failure to use appropriate clinical or laboratory data for adequate assessment of resident response to prescribed therapy.

Potential Error. A mistake in prescribing, dispensing, or planned medication administration that is detected and corrected through intervention before actual medication administration

Compliance Error. Inappropriate resident behavior regarding adherence to a prescribed medication regimen.

Other Medication Error. Any medication error that does not fall into a predefined category.

Medication Errors and Nurses

Nursing programs train nurses in the basic principles of medication administration; the 5 “R’s” focus on the right drug, the right dose, the right time, the right route, and the right patient. But in long term care nursing today, nothing is basic.

Right Patient: Nursing home residents don’t have wrist bands, a luxury afforded to hospital nurses; the Medication Administration Record has to be kept covered up for privacy; room numbers change; there are short term stays; confused residents, etc.

Right Drug: Generic names have desensitized the nurse to recognizing wrong medications; prescribers write by brand name, but pharmacy dispenses by generic, etc.

Right Dose: Liquid measurements & apothecary to metric conversions are difficult.

Right Route: Drug manufacturers change formulations for patent preservation; oral dosage forms can be administered rectally; injectable forms can be administered orally; capsules are formulated for inhalation.

Right Time: The pharmacy is not open 24 hours; reordering systems rely on memory; residents are in activities; residents receive 10 or more medications; administration techniques are cumbersome, residents non-cooperative.

Similar sounding drug names abound, i.e. Celebex, Celexa, and Cerebryx. Staffing shortages can lead to nurses running back and forth between too many residents, rushing, and giving more and more meds to residents with complex medical needs and deepening acuities. Nurses are often the center of activity for all resident care and her responsibilities are substantial. She finds lost laundry and programs IV epidural pumps. Nurses, more than any of the other health care professionals involved in medication management, are at risk for performing the active error and injuring the very residents they are trying to comfort or heal. Nurses know they are the last line of defense between a resident and a medication error and they have the added stress of feeling a personal responsibility for committing a medication error, often carrying it with them on a personal level over a long period of time. It is important to know what nurses say about the occurrence of medication errors.

In a 2001 study examining medication errors, Mary Blegen, PhD, RN, Colorado Nurses Association member, asked 1,200 nurses nationwide for the key reasons behind medication mistakes. The study focuses on reasons *other* than transcription problems like physician’s handwriting. The top reasons medication errors given by nurses were:

1. Distractions and interruptions
2. High patient-to-nurse ratios
3. Numerous medications to many patients
4. Lag time between when medications are prescribed and when they are delivered to the unit

The 2001 study concluded that:

- facilities must provide nurses with space away from high-traffic areas to prepare medications
- improve staffing levels.

However it is interesting to note that in an interview for *The American Nurse*, Nurse Attorney Suzanne Collins, reported there is more to the story of medication errors and nurses.¹⁴ As part of her dissertation research, Collins wanted to explore confidentially what nurses understood to be medication errors. What she found is that experienced nurses generally think that if no injury occurred, no error occurred. This understanding conflicts with legal reality and overlooks the importance of near misses in medication error prevention. One resident's near miss can be another resident's medication error.

Collins continues that more socialized nurses, those who have been around awhile, tend to bend the rules to benefit work-flow or their residents. For example, a nurse may take a shortcut and not confirm every resident's identity before administering medications. This nurse is at risk and has little defense if the resident is not identified and the incorrect medication is given. Further, rule bending has a dangerous effect on new nurses.

New nurses are freshly trained and want to do the task as they were trained, *by the book*. However, they are under tremendous social pressure to fit into their new unit. Following the example set by experienced nurses who are comfortable with shortcuts, the new nurses mimic the shortcuts, falling into a habit of skipping safety steps which may have dangerous consequences on high or low-census shifts.

Collins concludes that both experienced and new nurses must have continuing education on the legal ramifications of nursing practice, including the hazards inherent to bending the rules. Further, she states that it is crucial for administrators and managers to create an environment that focuses on system analysis and safety rather than placing personal blame for mistakes.

Deborah Huber, RN, MHSA, testified in 2002 before a legislative subcommittee that was considering a mandatory reporting system in Nevada. Huber was concerned that legislators believed that "once the bad apples are rounded up" health care facilities would be free of errors. Huber emphasized that reporting systems are only of value if they are used for learning rather than for judgment. Errors, according to Huber, are often predictable and that nurses should look at the near misses on their units and then share that information house-wide. [In long term care, these near misses should be part of the Quality Assurance Committee and therefore protected as provided by law and are not discoverable or admissible in any civil or administrative action.] Huber asserts that examining near misses are less threatening to staff in terms of system examination and voluntary reporting. Additionally, feedback must be provided to staff who report errors and Huber even recommends rewarding staff who report their errors.

¹⁴ Trossman, S. *Nurses Rx for Medication Errors*. The American Nurse. 2003: May/June: 1.

Safety Needs of Special Populations

Special populations consist of patients with diminished or underdeveloped cognitive and/or sensory function that are not fully able to participate in their own medical care.

ELDERLY PATIENTS, PATIENTS WITH DIMINISHED COGNITIVE FUNCTION, DEVELOPMENTAL OR LEARNING DISABILITIES

Patients suffering dementia or delirium, elderly patients (especially those suffering from Alzheimer's), developmentally or learning disabled patients and illiterate or semi-literate patients will often have difficulty in making correct decisions about their medication or in determining how they are to take their medications together. Diminished cognitive function patients are also likely to fail to properly identify themselves to physicians, pharmacists, CNAS, and others. This could lead to any number of adverse medical events or outcomes.

PSYCHIATRIC PATIENTS

As shown in the *Settings of Sentinel Events* Table (Appendix A), Psychiatric Hospitals are the second-most frequent setting for sentinel events. Psychiatric patients may be unable to fully participate in their medical care or treatment plans. The patients are often delusional or depressed and they are often under a medical regimen of psychotropic or sedating medications that may impair their perception of reality. Consider the residents that are on Behavior Management to continue their medications that alter their behavior. As with other patients with diminished cognitive function, these patients may also have difficulty in properly identifying themselves, which may result in improper medications and/or wrong-site treatments. Psychiatric patients are also more likely to be kept under restraint which may result in injury or death. The Joint Commission also reported that in 65 cases of inpatient suicides, 34 occurred in psychiatric hospitals, 27 occurred in general hospitals, and 4 occurred in residential care facilities. In 75% of the cases, the method of suicide was hanging in a bathroom, bedroom, or closet. 20% of the patient suicides resulted from patients jumping from a roof or window.

Public and Professional Education Resources

Your family members will appreciate patient safety brochures from the Joint Commission specific to “Speaking Up” about patient safety. Go to <http://www.jcaho.org/index.htm>, select General Public, and then choose “Speak Up” on the right side of the web page.

Other easy to access material suitable for family members is available on the Florida Health Care Association website, www.fhca.org; then select the Family Forum page; choose *Patient’s Tips to Prevent Medication Errors*.

AARP offers helpful educational materials to inform residents and their families on ways to govern their medical care. Go to <http://www.aarp.org/>; select *Health and Wellness*, and then choose *Checkups and Prevention*. *How to Talk with Your Doctor* provides good, general information that can help individuals communicate better with their physicians.

Software programs like Microsoft’s *Visio* allow you to easily create business and technical charts, including fishbone cause-and-analysis Ishikawa diagrams.

Other Resources:

Agency for Healthcare Research and Quality
<http://www.ahrp.gov/>

American Medical Association’s National Patient Safety Foundation
<http://www.npsf.org/>

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

National Center for Patient Safety
<http://www.patientsafety.gov/>

Nursing Trends and Issues
Reducing Health Care Error: Systems-Based Approaches and Nursing Perspectives
<http://www.nursingworld.org/readroom/nti/9808nti.htm>

Root Cause Analysis: Simplified Cause Analysis by Bjorn Andersen & Tom Fagerhaug; ASQ Quality Press. Milwaukee, WI.

Continuous Quality Improvement in Health Care: Theory, Implementation, and Applications by Curtis P. McLaughlin & Arnold D. Kaluzny; Aspen Publication. Gaithersburg, MD.

Measuring Quality Improvement in Healthcare: A Guide to Statistical Process Control Applications by Raymond Carey & Robert Lloyd; Quality Press. Milwaukee, WI.

Conclusion

Every day, more than a million nursing home residents receive high-quality care in our nation’s nursing homes and, on the whole, people take for granted those things that work. They get the right care, at the right time, and in the right way. Still, health care quality varies, and patient safety is one of the Nation’s most pressing health care challenges. Nursing Home Owners, Administrators, and nurse leaders must stand alongside government agencies, purchasers of group health care, and other health care providers in working together to make the U.S. health care system safer for patients, residents, and the public.

Appendix A

Total Number of Sentinel Events Reviewed by the Joint Commission Since January 1995: 2,085

Type of Sentinel Event	#	%
Patient suicide	336	16.1%
Op/post-op complication	266	12.8%
Wrong-site surgery	248	11.9%
Medication error	237	11.4%
Delay in treatment	125	6.0%
Pt. death/injury in restraints	101	4.8%
Patient fall	98	4.7%
Assault/rape/homicide	79	3.8%
Transfusion Error	56	2.7%
Perinatal death/loss of function	50	2.4%
Patient Elopement	43	2.1%
Fire	37	1.8%
Anesthesia-related event	31	1.5%
Med equipment-related	29	1.4%
Ventilator death/injury	29	1.4%
Maternal death	28	1.3%
Infant abduction/wrong family	24	1.2%
Death assoc. w/transfer	15	0.7%
Other less frequent types	252	12.1%

Sentinel Event Outcomes	#	%
Patient death	1,622	75%
Loss of Function	209	10%
Other	334	15%
Total patients impacted	2,165	100%

Settings of Sentinel Events	#	%
General hospital	1,334	64.0%
Psychiatric hospital	270	12.9%
Behavioral health facility	117	5.6%
Psych unit in general hospital	113	5.4%
Emergency department	83	4.0%
Long term care facility	75	3.6%
Home care	46	2.2%
Ambulatory care	41	2.0%
Clinical laboratory	5	0.2%
Health care network	1	0.0%

See also [Top 5 Sentinel Events by Setting of Care](#)

Sources for SE Identification	#	%
Self-report	1,414	67.8%
Media	235	11.3%
Complaints	211	10.1%
Identified during survey	122	5.9%
CMS or State Reports	103	4.9%

Self-reported Sentinel Events by Year	#Non-Self Reported	# Self-reported	% Self-reported
1995	22	1	4%
1996	31	3	9%
1997	123	16	12%
1998	50	130	72%
1999	55	278	83%
2000	87	270	76%
2001	101	336	77%
2002	146	269	65%
2003	56	111	66%

Medical Errors: Prevention & Analysis Post Test

Please carefully circle the letter that most correctly answers the question or completes the statement.

1. According to the 1999 Institute of Medicine's study, how many deaths occur every year in hospitals due to medical errors that could be prevented?

- a) 300-500
- b) 0
- c) 444,000 – 1 million
- d) 44,000 – 98,000

2. In the licensee's statute, medical error prevention continuing education must include:

- a) error reduction and prevention
- b) patient safety
- c) root cause analysis
- d) choices a) and b)
- e) choices a), b) and c)

3. The goal of Root Cause Analysis is the identification of individuals within an organization who are at fault in the final analysis of an error.

- a) True
- b) False

4. In a Case Study working through a Failure Mode, Effects, and Criticality Analysis, where might a care team analyze the seriousness of an error on the resident, i.e. in which phase would the consequences of a mistake be considered?

- a) Step 1 Exploration
- b) Step 2 Failure Modes
- c) Step 3 Criticality
- d) Step 5 Strategies

5. . An Active Error is considered:

- a) The "blunt" end of an error
- b) Removed from the direct control of frontline staff
- c) Inclusive of poor system design, possibly
- d) The "sharp" end of an error

6. When reporting adverse incidents to the state's Agency for Health Care Administration, an incident must meet which criteria:
- a) Is within control of the facility
 - b) Not within control of the facility
 - c) Meets outcome criteria as defined in 400.147 (5)(a), F.S.
 - d) Both a) and c)
7. A Latent Error is considered:
- a) The "blunt" end of an error
 - b) Producing effects which are felt immediately
 - c) To occur at the frontline staff level
 - d) The "sharp" end of an error
8. Which type of error is more dangerous?
- a) Latent
 - b) Active
9. In Root Cause Analysis, the primary task, or goal, of Data Collection is:
- a) To determine underlying factors that caused or contributed to the error
 - b) To conduct structured interviews
 - c) To generate a timeline or a sequence of events
 - d) To identify all latent errors in a sequence of events
10. In defining medical errors, the Institute of Medicine asserts that only adverse incidents attributable to errors must be investigated.
- a) True
 - b) False
11. According to a report in the American Journal of Medicine the highest percentage of medication error types in long term care occur in:
- a) Administration
 - b) Prescribing
 - c) Dispensing
 - d) Both b) and c)

12. Inappropriate (not indicated) care is what type of error?
- a) preventative
 - b) treatment
 - c) diagnostic
 - d) other
13. In Root Cause Analysis, the primary task, or goal, of Data Analysis is:
- a) To determine underlying factors that caused or contributed to the error
 - b) To conduct structured interviews
 - c) To generate a timeline or a sequence of events
 - d) To identify all latent errors in a sequence of events
14. In error reporting systems, publicly released information is typically part of what type of reporting system?
- a) an accountability reporting system
 - b) a safety improvement reporting system
 - c) both systems publicize reported errors
 - d) neither system results in releasing error reports to the public
15. In Mary Blegen's nationwide study of nurses, what did nurses report was the primary reason for medication errors?
- a) Numerous medications to many patients
 - b) Distractions and interruptions
 - c) Lag time between when medications are prescribed and when they are delivered to unit
 - d) High patient to nurse ratios
16. Which statement below accurately described the roles for an accountability reporting systems and safety improvement reporting systems?
- a) Accountability reporting systems utilize information to improve patient safety while safety improvement reporting systems emphasize the disclosure of unsafe practices to the public.
 - b) Safety improvement reporting systems utilize information to improve patient safety while accountability reporting systems emphasize the disclosure of unsafe practices to the public.
 - c) Accountability systems are internal systems.
 - d) Safety improvement work by uncovering lax standards of practice.

17. In Nurse Attorney Suzanne Collins’s research, experienced nurses generally hold that if an injury or harm does not occur at an outcome, no medical error has occurred. Why is this faulty understanding?
- a) It ignores the natural rule of cause and effect.
 - b) It initiates new nurses into bad habits with medication passes.
 - c) It overlooks the importance of near misses in preventing medication errors.
 - d) It disregards the fact that new nurses want to function “by the book”.
18. How may Failure Mode, Effects, and Criticality Analysis assist in reducing medical errors?
- a) Provides a mechanism for preventing errors before they occur
 - b) Provides a mechanism for evaluating errors so they will not occur again in the future
 - c) Serves as a reaction technique
 - d) Evaluates “near-misses”
19. Florida’s reporting system follows which system?
- a) Accountability
 - b) Safety Improvement
 - c) Both
 - d) Neither
20. How may Root Cause Analysis assist in reducing medical errors?
- a) Provides a mechanism for preventing errors before they occur
 - b) Provides a mechanism for evaluating errors so they will not occur again in the future
 - c) Serves as a preventative technique
 - d) Anticipates errors before they occur

Participant’s Name: _____

Medical Error: Prevention & Analysis Fees & Return Information

Participant Name: _____

As you would like it to appear on your certificate

Licensee Type: Administrator RN LPN
 Other (please specify): _____

License Number: _____

Facility Name: _____

Address: _____

Telephone Number: _____

FEES: Payment must be received when completed test is submitted to FHCA for scoring.

One Test: \$50.00 / each More than One: \$30.00/each

SELECT ONE: CHECK / MONEY ORDER (Payable to **Florida Health Care Association**)

CHARGE TO: VISA MASTERCARD AMEX

CARD NO: _____

EXP. DATE: _____

SIGNATURE: _____

AUTHORIZED AMOUNT: _____

Please submit the completed test and the completed evaluation form to the Florida Health Care Association, P. O. Box 1459, Tallahassee, FL 32302-1459 along with your payment. After the test has been reviewed and scored, the certificate of attendance will be mailed to the return address provided above. Please provide a complete return address. If you have any questions, you may call FHCA Headquarters at 1/800-771-3422.

**Medical Errors: Prevention & Analysis Self Directed Course
For Nursing Home Administrators and Nurses**

EVALUATION

Please rate this material and return this evaluation form with your examination.

Was the material:

- a. presented clearly? Yes No
- b. covered adequately? Yes No
- c. designed to meet the stated objective? Yes No

Did the course enhance your knowledge on this subject? Yes No

How much time was required to complete the course? _____

Suggestions for future correspondence course offerings:

Please return this completed evaluation to:
FHCA Evaluations
P.O. Box 1459
Tallahassee, FL 32302
Or Fax to: 850 681 2075

Thank you for your interest in this self-directed learning opportunity.