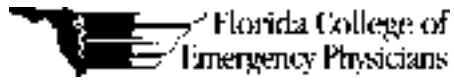
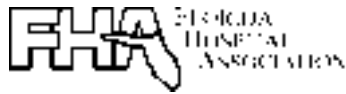


Patient Safety Steering Committee

**Building the
Foundations for
Patient Safety**



FLORIDA SOCIETY OF
HEALTH-SYSTEM PHARMACISTS



Florida Society
of Hospital
Physician Executives



Small & Rural
Hospital Council



Florida Organization of Nurse Executives



South • Florida • Hospital • & • Healthcare • Association

Falls Prevention also Endorsed by VISN 8

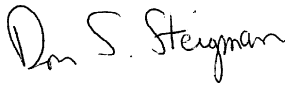


Florida Society for Healthcare
Security & Safety Professionals

November 2001

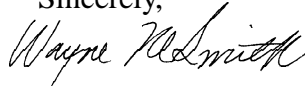
Dear Colleague,

The topic of medical errors, brought to the forefront by the Institute of Medicine's report *To Err is Human*, is of significant importance to health care providers in Florida. To explore solutions and practices that promote safer patient care and reduce risk, the Florida Hospital Association spearheaded the formation of an interdisciplinary Patient Safety Steering Committee. This Committee developed practice models for all hospitals to voluntarily incorporate in their patient safety programs that can lead to improved patient care. These models were endorsed by all of the Committee's participating organizations. We urge their endorsement and use by your facility.



Don Steigman
Committee Chairman

Sincerely,



Wayne NeSmith
FHA President

Practice Model Guidelines

Purpose

To create a culture of change that embraces patient safety through shared accountability within a blameless culture.

Development

The Patient Safety Steering Committee has developed model guidelines. These guidelines do not constitute the standard of care and are not intended to be the only practice methods for use.

Hospital Use

These guidelines were developed so that all hospitals would be able to implement them regardless of their size, level of automation, and location.

Team Approach

These guidelines are intended to be used by the health care team in a collaborative approach so that all aspects and caregivers are involved in the improvement process.

Organizational Modification

These guidelines should be tailored to each organization's unique structure, policies, and resources so that the best results can be achieved.

Research Based

These guidelines are based on current literature and research related to the particular practice.

These models are only a suggested guideline and not intended to be the only practice method.

Safe Medication Practices Ordering/Prescribing

- ◆ Have essential patient information readily available to those involved in the ordering/prescribing of medications. This includes diagnoses, allergies and sensitivities, lab values, current medication regimens and any other key information.
- ◆ Prior to writing any medication order, document patient allergies in a conspicuous area of the physician's order form. Document patient allergies on all pages of other applicable forms e.g. MAR, pharmacy profiles, Kardex, etc.
- ◆ Have essential medication references (such as PDR, Nurses Drug Handbook, MicroMedex, etc.) readily available on the units where medications are ordered/prescribed.
- ◆ Review formulary in collaboration with the Pharmacy and Therapeutics Committee of the medical staff to limit, where appropriate, the number of therapeutically and generically equivalent products.
- ◆ Assess variability in medication administration systems and standardize processes where possible, such as medication administration times.
- ◆ Develop special procedures/protocols for the use of "high risk" medications such as heparin, insulin, chemotherapy, concentrated electrolyte solutions etc.
- ◆ Include medication safety in staff orientation and competency programs.
- ◆ Develop protocols for verbal orders to assure that:
 - Ordering/prescribing practitioners must be identified
 - Patients must be clearly identified
 - Verbal orders must be clear and concise
 - Verbal orders from on-site practitioner are taken only in emergencies

- No verbal orders are taken for chemotherapy
- All verbal orders are repeated for verification
- ◆ Include all elements as part of an inpatient order:
 - Full name of medication (avoid abbreviations and acronyms)
 - Strength/Concentration
 - Dose
 - Route
 - Frequency/Rate
- ◆ Use metric system only
- ◆ Avoid abbreviations:
 - Spell out “units”. Do not use “u”.
 - Spell out medication name. Avoid abbreviations and acronyms.
 - Do not use any abbreviation for “daily”, “every other day”, or “four times daily”
 - Write out the word “Discharge” and “Discontinue”. Do not use the abbreviation “DC”.
 - Use leading zeros before a decimal point e.g. 0.2 mg.
 - Do not use trailing zeros e.g. do not write 2.0 mg.
- ◆ Standardize times of administration of medications where possible.
- ◆ Order medication by total dose required and not by volume, number of ampules or number of tablets.
- ◆ Use dosing charts and dosing formulas, when appropriate.
- ◆ Develop policies that prohibit the use of potentially confusing orders such as “resume same medications” or “resume pre-op medications”.
- ◆ Develop policies/procedures that address order legibility and clarification. Track and trend patterns and evaluate through peer review committees.
- ◆ Implement a performance improvement system for medication safety ordering/prescribing practices.

Safe Medication Practices Dispensing

- ◆ Ensure the immediate availability of appropriate and current drug reference texts and/or on-line resources to pharmacy personnel.
- ◆ Ensure that essential patient information, such as allergies, age, weight, current diagnoses, pertinent lab values, and current medication regimen, is available to the pharmacist prior to the dispensing of a new medication order. If information is not available on-line, develop pharmacy profile data to include essential patient data.
- ◆ Require that any order that is incomplete, illegible, or otherwise questionable be clarified using an established process for resolving questions. This applies to manual and automated systems.
- ◆ Create an environment for the dispensing area that minimizes distractions and interruptions, provides appropriate lighting, air conditioning/air flow, safe noise levels, and includes ergonomic consideration of equipment, fixtures, and technology.
- ◆ Utilize the unit-dose system to the fullest extent possible, even if extemporaneous packaging of medications, not already available in unit-dose form, is required.
- ◆ Dispense dosage units in a ready-to-administer form, whenever possible (e.g., prefilled syringes, premixed IV solutions, etc.). Ensure that prefilled syringes have appropriate route noted and, if possible, use non-interchangeable connections to prevent the inadvertent administration by another route e.g. oral, nasogastric, or intrathecal.
- ◆ Dispense single-dose vials and ampules rather than multidose vials.
- ◆ Dispense only pediatric vials/ampules for pediatric units and adult vials/ampules for adult units. Do not mix pediatric and adult doses on units.

- ◆ Require that all mathematical calculations for neonatal and pediatric dilutions, parenteral nutrition solutions, and other compounded pharmaceutical products be double-checked by a pharmacist.
- ◆ Require that a second pharmacist double-check the accuracy of order entry and dose calculations for all orders involving antineoplastic agents. Determine other high risk drugs dispensed in your facility that require double checking.
- ◆ Review the appropriateness of floor-stock medications. Eliminate dangerous products such as concentrated potassium chloride injection and lidocaine 2% 50-ml vials. Consider using automated dispensing devices such as Pyxis®, Acudose®, or others to increase security and accountability of necessary medications stocked in patient care areas if not currently in use and ensure such units are set up and managed properly in order to realize safety and security benefits.
- ◆ Appropriately label all dispensed medications to include medication name, dose to be administered, dosage form, route, special storage requirements, lot number or batch number if applicable, expiration date, and all other applicable warnings. Compare original order, order label, and medication container for accuracy.
- ◆ Establish procedure(s) whereby proposed changes in packaging/ labeling, concentration, etc. are reviewed prior to being implemented, to reduce error potential. Notify users, such as anesthesia, emergency department, and critical care staff, of any changes in packaging/ labeling and/or concentration of products used. This may occur due to changes in purchasing contracts, new drug concentrations, or product availability.
- ◆ Use standard concentrations for the administration of high-risk medications (e.g. heparin, aminophylline, lidocaine, dopamine, insulin, morphine, etc.) Many of these medications are commercially available as premixed infusions.
- ◆ Publicize and enhance the awareness of look-alike and sound-alike medications. Use warning signs, to help differentiate medications from one another, especially when confusion exists between or among strengths, similar looking labels, or similar sounding names.

- ◆ Separate look-alike and sound-alike medications in pharmacy dispensing areas or consider repackaging or using different vendors.
- ◆ Carefully review and consider the significance of pharmacy computer system warnings/alerts for drug interactions, dosage range, allergy, and other warnings so as not to become desensitized to these warnings/alerts.
- ◆ Require that all investigational drugs be dispensed by the pharmacy and that pharmacy, medical and nursing personnel are knowledgeable of the medication's pharmacology, administration guidelines, potential adverse effects, proper monitoring techniques and storage requirements.

Safe Medication Practices Administration

- ◆ Ensure that essential patient information, including allergies, age, weight, current diagnoses, relevant lab values and current medication regimen, is available.
- ◆ Ensure the immediate availability of appropriate and current drug reference texts and/or online resources to those who administer medication.
- ◆ Those who administer medications should be knowledgeable about the drug's uses, precautions, contraindications, potential adverse reactions, interactions, and proper method of administration.
- ◆ Require that any order that is incomplete, illegible, or otherwise questionable be clarified using an established process for resolving questions prior to administration of the medication.

- ◆ Verify the dispensed medication for any new medication order with the original prescriber's order and Medication Administration Record (MAR) to ensure that it is the correct medication for administration.
- ◆ Require a Medication Administration Record (MAR) reconciliation process be conducted by pharmacists and nurses to ensure investigation and resolution of any differences in interpretation of physician orders.
- ◆ Provide, as much as possible, for a pharmacist's review of non-emergent and non-urgent medication orders prior to administration of a first dose of medication to a patient.
- ◆ Note both the brand and generic drug name on the Medication Administration Record (MAR).
- ◆ Administer only medications that have been fully labeled with medication name, dose to be administered, dosage form, route, special storage requirements, expiration date, and all other applicable warnings.
- ◆ Create an environment for administration that minimizes distractions and interruptions, provides appropriate lighting, safe noise levels, and includes ergonomic consideration of equipment, fixtures, and technology.
- ◆ Utilize a standard medication administration time schedule, if appropriate. Educate nursing staff on how and when to incorporate newly started medication orders safely into the standardized schedule.
- ◆ Maintain medication in its unit-dose package until the point of actual administration.
- ◆ If a mathematical calculation of a dose is necessary, have a second nurse verify the calculation.

- ◆ Ensure that nursing staff receives adequate education on the operation and use of devices and equipment used for medication administration (e.g. infusion pumps, PCA pumps, syringe pumps, etc.)
- ◆ Have another nurse double-check infusion pump settings when critical, high-risk drugs are infused.
- ◆ Confirm all of the “rights” prior to administering a medication (right patient, right drug, right dose, right dosage form, right route, right time and right education).
- ◆ Educate patients about their role in taking medications and questions they should ask. Develop and document patient education.
- ◆ Do not administer multiple dosage units of any drug without double-checking for accuracy and appropriateness of the dose, e.g. an order that might require the administration of *several* tablets, capsules, single dose vials, etc. as *one* dose.
- ◆ Document all medications immediately after administration.
- ◆ Never borrow medications from another patient’s medication cassette.
- ◆ Establish policies/procedures for double-checking that includes verification of the original order, calculation, appropriateness, patient information and actual prepared medication.

Safe Medication Practices Monitoring

- ◆ To the fullest extent possible, monitor patients receiving medications with a narrow therapeutic index/critical dose, e.g. digoxin, theophylline, heparin, warfarin, phenytoin, lithium, carbamazepine, etc. If automated systems are not available, develop systems and processes to address such drugs.
- ◆ Review all out-of-therapeutic-range serum drug levels reported by the laboratory for patients throughout the hospital and intervene as appropriate. Establish notification times for alerts on critical lab values. If automated systems are not available, develop systems and processes to address critical lab values related to medication administration.
- ◆ Establish protocols and guidelines for use with critical and/or problem-prone medications to help optimize therapies and minimize the possibility of adverse events. Integrate “triggers” to indicate the need for additional clinical monitoring.
- ◆ Develop nonpunitive processes for reporting medication errors, near misses, and adverse drug reactions. Track, trend, and review these events as part of a regularly scheduled interdisciplinary committee such as the Pharmacy and Therapeutics Committee. Focus on implementing changes to improve systems and processes.

Safe Surgery Practice Marking Correct Surgery/Procedure Site

Surgeon

Surgeon must be involved in the consent process and note the correct site in his documentation; consider having him “co-sign” the site, if possible.

Patient

Require the patient and/or patient’s family to be an active participant in identifying the appropriate surgical/procedure site.

Marking

Clearly mark either the correct side or the incorrect side with “YES” or “NO”. A clearly marked site should be used with indelible marking pen (e.g. “Do not cut here or Do cut here” The use of an “X” is misleading as in does X mark the spot or does X indicate this is not the right site).

Records/Documentation

Patients chart, OR schedule, and consent form must all be in agreement and reviewed in Pre-op Holding with patient/patient’s family. Have all relevant patient information available before surgery/procedure and ensure that all sources match with the same site. (Medical record, Xrays, tests, etc.).

Consider the use of a body diagram in documentation, clearly marking the correct surgical/procedure site.

Verification

Require oral verification of the correct site in the OR/Procedure Room by ALL members of the team; do not rely only on surgeon. Ensure that all members of the OR team can “interrupt” for verification check of proper site.

In operating room, prior to prepping and draping, the anesthetist/ anesthesiologist, surgeon, circulator and charge nurse re-verify proper site.

Use a verification checklist.

Monitor

Have a monitoring system for verification procedures.

Falls Prevention Initiative

What is a Fall?

A definition of “fall” is important for each organization to determine in order to count and calculate accurate falls information for analysis. There is no national or state definition of “fall”. Fall definitions have been developed primarily by researchers and by vendors for performance measurement systems. Organizations have usually tailored the definition to fit their needs and patient populations. The following definition is suggested for general use.

Fall - An unintended event resulting in a person coming to rest on the ground/floor or other lower level (*witnessed*), or is reported to have landed on the floor (*unwitnessed*) (not due to any intentional movement or extrinsic force such as stroke, fainting, seizure.)

A Comprehensive Interdisciplinary Program

Falls happen because of a complex interaction of intrinsic and/or extrinsic factors. Interventions also require a multi-faceted approach. A comprehensive falls prevention program will include an assessment of many factors by a team of professionals, with interventions that address a variety of approaches that will help most patients as well as be tailored for individual patient needs. A falls prevention program should be oriented to both reducing falls and reducing injuries.

Key components for a comprehensive program

1. Assessing/screening for risk factors for falls
2. Using triggers to implement falls prevention protocol
3. Implementing protocol according to patient needs
4. Assessing and reassessing patient and modifying as appropriate
5. Reporting falls (internal and external)
6. Measuring/monitoring fall rates
7. Improving falls prevention program

1. Assessing/Screening for Risk Factors for Falls

Identification of fall-risk patient

Probably the most important action that hospitals can take to identify and reduce risk for falls is an early entry screening for ALL patients. This is usually conducted by nursing staff upon entry into the health care system and should be based on the current literature addressing risk factors.

Health care systems will choose different methods to identify fall-risk patients. The method should be recognized by all staff, physicians and departments to ensure continuity regardless of the patient's location. Visual methods, such as colored identification bands, may be useful but should be portable if the patient is moved, and computer review should be used where available. The method should fit the organization's documentation and reporting system as automation is increased.

Risk factors are listed as *intrinsic* (related to the individual) or *extrinsic* (related to the environment). The following factors have been reported as most contributory to falls risk. Usually, a combination of factors is involved and the more risk factors present, the greater the chance for falling.

A. Risk factors assessment -Intrinsic

Patient characteristics and general physical functioning

- Age (increase in risk factors associated with aging)
- Gender (consider increased risk for injury associated with osteoporosis)
- Physical activity level/disability/immobility
- Deficits in ambulation/mobility, ability
- Unsteady gait/balance ability
- Motor deficits (decreased coordination and loss of balance)
- Lack of physical activity, reduced body mass/strength
- Use of assistive devices (e.g. wheelchair, cane, walker, etc.)
- History of falls, especially with injury (fall increases fear of activity and leads to increased inactivity)
- Sensory changes/impairment (e.g. impaired vision, hearing, touch, vibration sense, proprioception)
- Slow reaction time
- Communication barriers

Patient diagnosis and/or physical changes

- Mental deficits
- Acute illness
- Musculoskeletal and neuromuscular conditions
- Abnormal gait or posture due to pain, fatigue, arthritis, osteoporosis, Parkinson's
- Foot problems/conditions limiting mobility
- TIA (vertigo, dizziness, fainting)
- Seizures
- Stroke and resulting weakness
- Inner ear/cerebellar disease
- Orthostatic hypotension
- Heart disease and/or arrhythmias
- Congestive heart failure
- Pneumonia
- Primary cancer, clinical depression, HIV
- Within twenty four hours after surgery
- Temperature elevation (>100F oral or >101F rectal)
- Urinary frequency and urgency; nocturia and/or incontinence or other altered elimination pattern (including a Foley catheter)
- Fecal incontinence

Medications and drug interactions

- Polypharmacy (especially four or more meds)
- Diuretics and laxatives
- Antihypertensives
- Sedatives, tranquilizers
- Psychotropic drugs
- Antidepressants
- Medications which might alter balance or increase risk for injury including antiarrhythmics and anticoagulants

Side effects rather than the medication itself may be more important (e.g. medications that cause sedation, impair postural stability, produce Parkinson-like effects, cause hypotension or hypoglycemia, affect vestibular function, result in neuropathy, hypothermia or confusion, etc.)

Mental condition/cognition and alcohol use

- Impaired memory/judgment/cognition
- Mental confusion
- Faulty judgments (impulsivity)
- High anxiety
- ECT confusion/giddiness (electric convulsive therapy)
- Delirium
- Intoxication

B. Risk factors assessment - Extrinsic

Environmental characteristics

- Lighting levels that cause glare or limit visibility
- Floor surfaces/treatments that promote slips/trips/stumbling
- Furniture (location, size, projections, locks, stability)
- Bed position raised
- Bed locks/brakes that are unlocked
- Crib latches open
- Use/type of side rails without an exit for the patient
- Lack of nonskid footwear
- Lack of supports (e.g. handrails, call bell)
- Time of day/shift change (peak falls occurrence for specific facility)
- Assistive devices (knowledge, skills, stability)
- Wheelchair or other assistive devices not individualized to the patient's needs/abilities
- Length of stay (increased stay increases risk for falls to occur)

Use of Restraints

The use of restraints as a measure to prevent falls deserves a special comment. Physical restraints and bedrails have often been used as an approach to reduce falls. Recent literature and new standards (Centers for Medicare and Medicaid Services, Joint Commission on the Accreditation of Health Care Organizations) alert us to the previous overuse of these measures as an ineffective way to prevent falls and often result in serious injury and even death. Some evidence suggests that risk of falls out of bed actually increases when restraints are applied. Serious consideration should be given to using restraints appropriately for individual patient needs in accordance with regulations and standards. Other mechanisms should be considered for prevention of falls.

C. Risk Factors for Specialty Units

While risk factors are common to large populations, especially the elderly, there are unique risk factors for falls for specialty units. This list is not exhaustive but highlights areas that could be potential triggers for patients in these units.

| <u>Specialty Unit</u> | <u>Risk factors</u> |
|-----------------------|--|
| Critical Care | awakening from coma, overdose, hypoxia, environmental psychosis |
| Obstetrics | prolonged labor, excessive blood loss, first and second time out of bed after delivery, within 24 hours after epidural |

| <u>Specialty Unit</u> | <u>Risk factors</u> |
|-----------------------|--|
| Psychiatry | unpredictable affect, antidepressants, orthostatic side effects, polypharmacy, wandering, acting out |
| Rehabilitation | incontinence, polypharmacy, stroke disability requiring assistance with activities of daily living, and mobility deficits |
| Geropsychiatric | confusion, polypharmacy, antidepressants, hypotension, anxiety, age-associated conditions |
| Pediatrics | age (developmental vs. fall), within 24 hours after surgery, head injured patients and other neurological disorders, respiratory disorders |

(Source: Hendrich, A., Nyhuis, A., Kippenbrock, T., & Soja, M. E., 1995)

2. Using Triggers To Implement Falls Prevention Protocol

Protocol trigger

Screening of patients should identify a trigger for a fall prevention protocol to be activated for those at risk. The trigger should be clearly identified as to whether single or multiple factors must be present, or if a scoring scale is used, if a certain score triggers the protocol. All staff should be oriented to the screening process, triggers, and protocol.

Protocol or modified fall precautions activated

A falls prevention protocol should be well-defined with both intrinsic and extrinsic approaches. Staff should be oriented and educated to these interventions.

Resources should be provided so interventions can be implemented for the specific population, unit and organization. Population specific risk factors and interventions for specialized high-risk populations should be identified. Documentation should reflect screening, triggers, and interventions as well as the patient's response.

3. Implementing Protocol According to Patient Needs

Interventions that best cover the many factors associated with falls should address intrinsic and extrinsic factors. This broad approach will provide the best method of covering most common factors identified through research or practice. A list of possible interventions follows. The most flexible protocols 1) use prompts to remind staff; 2) include the most common factors related to reducing falls for a specific population; 3) allow for individual patient needs; 4) are based on evidence and “best practice” at the current time; 5) are organized into some approach for level of risk; 6) are efficient and cost-effective; and 7) are simple and easy to use.

Levels of interventions for protocols are often categorized into risk level such as the following:

- Normal/Low Risk Prevention Protocol or Level I
- Medium Risk Modified Protocol or Level II
- High Risk Strict Protocol or Level III

(See: Brady et al; Hendrich et al; Patrick et al for examples)

Some units may determine that all patients on the unit are at high risk for falls based on the type of patients served and apply certain interventions to all patients. In these cases, patients should be reassessed as they are moved to other units or as their condition changes.

Interventions/Protocols include implementation and assessment of a variety of components based on the patient’s condition. A multi-component approach will best serve most patients.

Examples of interventions include:

A. Intrinsic Interventions

- Evaluate polypharmacy for patients including pharmacist’s participation
- Evaluate toileting routines (falls may be exacerbated by use of diuretics and laxatives)
- Educate on proper use of assistive equipment
- Increase muscle tone and bone density; add conditioning routines

B. Extrinsic Interventions

- Maintain bed in lowest position (even at normal height, typical hospital beds are 4-6 inches higher than domestic beds leading to unanticipated drops)
- Make sure bed is locked; stabilize furnishings
- Keep call bell within easy reach

- Provide easy access to glasses, hearing aids and other personal necessities
- Have assistive devices available
- Eliminate obstacles between bed and bathroom
- Remove clutter in environment
- Keep bathroom light on
- Keep internal bed night light on
- Use split side rails for mobility assistance only
- Use Geri chair when appropriate
- Use chairs with armrests
- Use pillow buddies to stabilize patients in chairs
- Provide overhead trapeze when needed
- Provide bedside commode when needed
- Provide raised toilet seat
- Ensure clothing does not interfere with mobility
- Provide safety aids (grab bars/hand rails)
- Use lighting that reduces glare
- Keep floors dry; clean up spills promptly
- Use self-latching locks on utility doors
- Install alarms on exits
- Restrict window openings
- Consider low impact flooring (especially in rehab settings)

C. Tools

- Color-coded identification bands/stickers/posters/footwear
- Non-skid footwear
- Bed alarms (fall sensor devices)
- Chair alarms (fall sensor devices)
- Provide special assistive devices and be sure they are in good condition
- Protective hip pads
- Cube chairs for stability
- Gait belts
- Hallway banisters
- Floor mats

D. Patient/Family Education

- Orient patient/family to unit and falls prevention protocol
- Instruct patient to call for assistance
- Educate patient/family to their responsibilities in fall prevention
- Use brochures, pictures, and signage as reminders about using call bell, etc.
- Enlist family participation to support interventions and alert staff to patient changes and increased risk for falls.

- Consider patient's culture in determining interventions (in some cultures asking for help is not acceptable; be sure the person understands the language)
- Remind family to check with staff if side rails are up when they arrive to visit the patient
- Provide skills training as appropriate
 - Transfer skills
 - Ambulation skills
 - Use of assistive devices
 - Gait training, balance, strength training
 - Bladder training/Bowel training

E. Other Measures

- Frequent observation checks
- Reorientation to unit/protocol/safety measures
- Evaluation of gait/balance for independent activities of daily living
- Orthostatic vital sign checks
- Sitters
- Use of interpreters for communication barriers

F. Referrals

- As specific factors are identified, patients may need a referral to additional services such as physical therapy, occupational therapy, or psychiatry to reduce risk for falls or repeat falls.

G. Staff Education

- Ensure staff receives information and education on falls prevention program
- Educate on possible interventions to reduce falls including offering assistance for toileting, fluids/nutrition, and other needs
- Have protocol information readily available
- Ensure consistent use of fall risk assessment tool and documentation
- Assess competency related to application of protocol
- Include an interdisciplinary approach and team
- Educate staff on the role of root cause analysis after falls occur, including goals of performance improvement and outcome monitors
- Educate staff on shared accountability for patient safety
- Provide unit specific and facility specific falls data feedback regularly to staff.

4. Assessing and Reassessing Patient

Initial assessment of the patient for risk takes place on admission to the health care facility. Reassessment of the patient's condition and risk of falling should occur at least once per shift in accordance with policy, and whenever the patient's condition changes, such as after a procedure, or starting a new medication.

If a fall occurs, the patient should first be assessed for injury. Then the appropriate persons should be notified (Nurse Manager/Supervisor, Physician, etc.) as defined in policy. Documentation should include an assessment of the patient including any injuries. Reassessment of the patient may include a change to a higher level of risk category with additional interventions and precautions.

Most falls do not lead to serious injury; however, moderate to severe injuries reduce mobility and independence and increase the risk of premature death. The most common fall-related injuries are osteopathic fractures of the hip, spine or forearm. Of all fall-related fractures, hip fractures are the most serious and lead to the greatest number of health problems and death. Patients who fall once during their hospital stay are more likely to fall again, increasing the risk for more injury. Most elders fall on a level surface; most children fall from heights.

Injury – a disruption of structure or function of some part of the body as a result of an unplanned event.

There are several methods to assess patient injury/harm after a fall in a consistent manner that will facilitate communication about injuries, standardize documentation, and enhance data reporting and analysis.

Injury status or severity of injury can be coded according to a scale

- 0 None** – no adverse result
- 1 Minor**-contusion, abrasion, small skin tear, or laceration involving little or no care or observation
- 2 Moderate**- sprain, large or deep laceration, skin tear, or minor contusion requiring medical and/or nursing interventions (e.g. suturing, ace bandage, ice bag or splint)
- 3 Significant** – fracture, loss of consciousness, change in mental or physical status requiring medical intervention and/or consultation
- 4 Mortality** – fall results in death

(Source: Maryland Hospital Association Quality Indicator Project® and South Florida Hospital and Healthcare Association)

5. Reporting Falls

A. Internal

Falls and fall injuries should be reported internally to the organization through the risk management program as required by Florida statute (F.S. 395.0197). Assessing the individual patient who fell will guide additional measures and interventions to prevent additional falls.

Internal communication to the staff about falls helps underscore the importance of the program and involves the team in reviewing the protocol and interventions. Assessing conditions and patterns will guide improvement of the falls prevention program. Falls are reported internally for analysis to determine if they need to be reported externally.

B. External

Florida statute (F.S. 395.0197) requires an annual report to the state Agency for Health Care Administration (AHCA) for incidents and requires special reporting of Code 15s when an injury meets certain criteria. Additionally, certain conditions are required to be reported to CMS such as restraint death. Careful root cause analysis or evaluation should be conducted to analyze the fall, injury and application of devices to prevent falls that may be associated with reporting requirements. If a fall results in a serious injury or death, it will also meet the Joint Commission's definition of a sentinel event. Reporting options for sentinel events can be found on the Joint Commission's web site (www.jcaho.org).

6. Measuring/Monitoring Fall Rates

A. How do you measure falls?

After a fall is defined, then inclusion and exclusion criteria are applied to ensure accurate collection and analysis of falls. Falls are counted and then placed in "context" so that a rate can be determined and monitored.

Patient Fall Rate- The rate at which patients fall during the course of their hospital stay per 1,000 patient days.

Patient Fall Injury Rate- A separate category is patient fall rate with injury per 1,000 days.

B. Calculation of fall rates

Fall rates ensure measuring outcomes in a standardized manner, so the organization can monitor *internal* performance over time and compare with *external* organizations in order to improve.

Each organization should standardize its approach in calculating and reporting falls data.

Calculating and reporting falls are key data collection activities related to patient care and outcomes. The most commonly used method for fall rate calculation is listed below.

$$\frac{\text{Number of Eligible Falls}}{\text{Number of Eligible Patient Days}} \times 1,000 = \text{Fall Rate}$$

The fall rate for a specified time period is defined as the total number of eligible falls divided by the total number of eligible patient days multiplied by 1,000 to create a fall rate per 1,000 patient days. Consistent application of the numerator according to definition is critical to have comparative data. Numerator inclusions/exclusions must be defined. For example an organization may begin with total falls (e.g. injured plus not injured) and then a stratification process applied to further analyze data (e.g. injured only). Numerator exclusions would be falls that were not documented, falls for non-acute care beds, and newborns who ‘slip’ from a parent/other. Denominator exclusions are patient days for patients in non-acute care beds and newborn days. If a specific unit or department rate is calculated, then the denominator must reflect that unit/department’s patient days. Certain high-risk areas may be stratified so that interventions specific to the population can be monitored.

Fall rates are usually calculated by month and quarter with comparisons monitored throughout the year for improvement trends and relationship to fall prevention program implementation. (If the organization is very small, then fall rates by quarter, rather than by month, may be more useful).

There are multiple ways to further stratify fall rates to assist organizations in determining risk factors, assessing injuries, and identifying opportunities for improvement. Hospitals should consider stratification approaches based on unit type, issues and patient population.

C. Stratification approaches to analyze falls

- Falls by reason
 - patient's personal health status
 - treatment/activity
 - associated medication (s)
 - environmental hazards
 - time of day
 - length of hospital stay
 - location
- Falls resulting in injury
- Falls by injury severity
- Repeat falls
- Falls by unit/department
- Falls by type (e.g. psychiatry, rehabilitation)

D. Comparison Rates

Hospitals should first monitor internal performance and trends to identify improvement opportunities. Comparisons to external organizations with "similar" populations may help provide target goals. Comparison rates can be found from performance measurement systems such as the Maryland Hospital Association Quality Indicator Project® (www.qiproject.org) and research studies reported in the literature. The following fall rates have been reported in various research studies. They should not be considered "benchmarks" but a beginning comparison for selected populations. The literature suggests that certain specialties such as psychiatry and rehabilitation have significantly different fall rates from the general acute care population.

| <u>Fall Rates per 1,000 patient days for selected units:</u> | |
|--|----------|
| Geropsychiatry | 13.1-25 |
| Rehabilitation | 7.6-12.6 |
| Geriatric medical | 7.8 |
| Neurology | 5.2 |
| Psychiatry | 4.1 |
| Oncology | 3.5 |
| General medical | 3.0 |
| Surgery | 2.2 |
| Ophthalmology | 2.2 |
| Obstetrics-gynecology | 1.8 |

Source: Mahoney, J.E., 1998

7. Improving Falls Prevention Program

A systems approach to falls prevention and safety ensures that an interdisciplinary team addresses the issue from multiple perspectives. It also allows for local management of issues and barriers that are specific to the unit, staff and patients. Using systems and processes will assist in analysis of falls data in order to create a continuous improvement cycle.

Situational factors always exist in every process that may hinder implementation of strategies to prevent falls. Identifying those factors may assist the team in modifying protocols or care plans in attempts to reduce the risk of falls.

A. Possible barriers to prevention of falls

- Shift change
- Patients who are active when staff is occupied
- Acting out behaviors (especially on behavioral health units)
- Lack of information at transfers of patients to other units/departments about patient's risk factors
- Changes in the medical condition that are not clearly documented that increase risk, even if temporarily (e.g. seizure, surgery)
- Slippery/uneven floors
- Full side rails
- Footwear with slick soles
- Malfunction or misuse of equipment, such as bed alarms
- Incomplete orientation of new staff
- Insufficient patient/family education
- Inadequate staffing
- Reduced use of restraints without alternatives
- Patient unwilling/unable to call for assistance
- Patient forgetfulness/confusion
- Patient communication/cultural barriers

References

- Agency Health Research Quality (AHRQ). (2001). Prevention of falls in hospitalized and institutionalized older people in making health care safer: A critical analysis of patient safety practices. Available: www.ahrq.gov/clinic/ptsafety/chap26b.htm.
- American Geriatrics Society, British Geriatrics Society, & American Academy of Orthopedic Surgeons Panel on Falls Prevention. (2001). Guideline for the prevention of falls in older persons. *Journal American Geriatric Society*, 49(5): 664-672.
- Ash, K. L., Macleod, P., & Clark, L. (1998). A case control study of falls in the hospital setting. *Journal of Gerontology*, 24(12):7-15. Dec.
- Brady, R., Chester, F. R., Pierce, L. L., Saltr, J. P., Schreck, S., & Radziewicz, R. (1993). Geriatric falls: Prevention strategies for the staff. *Journal of Gerontological Nursing*, 19, 26-32, Sep.
- Brakey, M. R. (1996). Myths & facts about patient falls. *Nursing*, 26(6):17, Jun.
- Breland, B.D. (2000). Strategies for the prevention of medication errors. *Hospital Pharmacy Report*, 14(8), 56-65.
- Cameron I. D., Stafford, B., Cumming, R. G., Birks, C., Kurrle, S. E., Lockwood, K., Quine, S., Finnegan, T., Salkeld, G. (2000). Hip protectors improve falls self-efficacy. *Age & Aging*, 29 (1):57-62.
- Center for Diseases Control (CDC). The costs of fall injuries among older adults. www.cdc.gov/ncipc/factsheets/fallcost.htm
- National Center for Injury Prevention and Control at CDC. Falls and hip fractures among older adults. Retrieved Mar. 5, 2001. Available: www.cdc.gov/ncip/factsheets/falls.htm
- Chu, S., Pei, C. K. W., Chiu, A., Liu, K., Chu, M. M. L., Wong, S., & Wong, A. (1999). *Journal of Gerontology*, 54A(1):M38-M43.

Cohen, M.F. (March 26, 1999). Current issues in medication error prevention. Lecture presented to the Florida Society of Health-System Pharmacists, Mid Year Meeting.

Cohen, M. R. (1999). Medication errors. Washington, DC: American Pharmaceutical Association.

Connell, B. R. (1996). Role of the environment in falls prevention. Clinics in Geriatric Medicine, 12(4):859-880.

Cumming, R. G. (1998). Epidemiology of medication-related falls and fractures in the elderly. Drugs & Aging, 12(1):43-53.

Eagle, D. J., Salama, S., Whitman, D., Evans, L. A., Ho, E., & Olde, J. (1999). Comparison of three instruments in predicting accidental falls in selected inpatients in a general teaching hospital. Journal of Gerontological Nursing, 27(7):40-5. July.

Hendrich, A., Nyhuis, A., Kippenbrock, T., & Soja, M. E. (1995). Hospital falls: Development of a predictive model for clinical practice. Applied Nursing Research, 8(3):129-139.

Ignatavicius, D. (2000). Fall prevention challenge. Nursing Management, 31(1):27-30.

Irvin, D. J. (1999). Psychiatric unit falls events. Journal of Psychosocial Nursing, 37(12):8-16.

Joint Commission on Accreditation of Hospitals. (2001). Revisions to Joint Commission Standards in Support of Patient Safety and Medical/Health Care Efforts. Available: www.jcaho.org/standard/fr_safety.html.

Joint Commission on Accreditation of Hospitals. (July 12, 2000). Sentinel Event Alert. Fatal falls: Lessons for the future, Issue 14. Available: www.jcaho.org/edu_pub/sealert/sea14.html

Joint Commission on Accreditation of Hospitals. (November 19, 1999). Sentinel Event Alert. High-alert medications and patient safety, Issue 11. Available: www.jcaho.org/edu_pub/sealert/sea11.html.

Joint Commission on Accreditation of Hospitals. (August 28, 1998). Sentinel Event Alert. Lessons learned: Wrong site surgery, Issue 6. Available: www.jcaho.org/edu_pub/sealert/sea6.html

Joint Commission on Accreditation of Hospitals. (May, 2001). Sentinel Event Alert. Look-alike, sound-alike drug names, Issue 19. Available: www.jcaho.org/edu_pub/sealert/sea19.html.

Joint Commission on Accreditation of Hospitals. (September, 2001). Sentinel Event Alert. Medication errors related to potentially dangerous abbreviations, Issue 23. Available: www.jcaho.org/edu_pub/sealert/sea23.html.

Joint Commission on Accreditation of Hospitals. (February 27, 2001). Sentinel Event Alert. Mix-up leads to medication error, Issue 16. Available: www.jcaho.org/edu_pub/sealert/sea16.html.

Jorm, A. F., Grayson D., Creasey, H., Waite, L., Broe, G. A., (2000). Long-term benzodiazepine use by elderly people living in the community. Australian & New Zealand Journal of Public Health, 24(1):7-10. Feb.

Kannus, P., Parkkary, J., Niemi, S., Pasanen, M., Palvanen, M., Jarvinen, M., Vuori, I. (2000). Prevention of hip fracture in elderly people with use of a hip protector. New England Journal of Medicine, 343 (21):1562-3. Nov. 23.

King, M. B. & Tinetti, M. E. (1996). A multifactorial approach to reducing injurious falls. Clinics in Geriatric Medicine, 12(4): 745-759.

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (1999). To err is human. Building a safer health system. Committee on Quality of Health Care in America. Institute of Medicine. Washington, DC: National Academy Press.

Leipzig, R. M., Cumming, R. G. & Tinetti M, E. (1999). Drugs and falls in older people: a systematic review and meta-analysis: I. Psychotropic drugs. Journal American Geriatric Society, 47(1):30-9.

- Llorente, M. D., David, D., Golden A. G., Silverman M. A. (2000). Defining patterns of benzodiazepine use in older adults. Journal of Geriatric Psychiatry and Neurology, 13(3):150-60.
- Lord, S., & Dayhew, J. (2001). Visual risk factors for fall in older people. Journal American Geriatric Society, 49(5):508-15.
- Mahoney, J. E. (1998). Immobility and falls. Clinics in Geriatric Medicine, 14(4), 699-726.
- McCollam, M., E. (1995). Evaluation and implementation of a research-based falls assessment innovation. Nursing Clinics of North America, 30(3):507-514.
- Mitchell, A. & Jones, N. (1996). Striving to prevent falls in an acute care setting - action to enhance quality. Journal of Clinical Nursing, 5(4):213-220.
- Morse, J. M. (1993). Nursing research on patient falls in health care institutions. Annual Review of Nursing Research, 11, 299-316.
- Morse, J. M., Morse, R., & Tylko, S. J. (1989). Development of a scale to identify the fall-prone patient. Canadian Journal on Aging, 8 (4) 366-377.
- Mosley, A., Galindo-Ciocon, D., Peak, N., & West, M. J. (1998). Initiation and evaluation of a research-based fall prevention program. Journal of Nursing Quality, 13(2):38-44.
- Myers, A. H., Young, Y., & Langlois, J. A. (1996). Prevention of falls in the elderly. Bone, 18(1):87S-101S.
- National Coordinating Council for Medication Error Reporting and Prevention Recommendations for Avoiding Error-Prone Aspects of Dispensing Medications, Adopted March 19, 1999.
- Patrick, L., Leber, M., Scrim, C., Gendron, I., & Eisener-Parsche, P. (1999). A standardized assessment and intervention protocol for managing risk for falls on a geriatric rehabilitation unit. Journal of Gerontological Nursing, 40-47, April.

Ray W. A., Thapa P. B., Gideon P. (2000). Benzodiazepines and the risk of falls in nursing home residents. Journal of the American Geriatrics Society, 48(6):682-85.

Rogers, S. (1994). Reducing falls in a rehabilitation setting: A safer environment through team effort. Rehabilitation Nursing, 19(5):274-276.

Rubenstein, L. Z. (2000). Hip protectors. A breakthrough in fracture prevention. New England Journal of Medicine, 343 (21):1562-1563.

Sullivan, R., P., & Badros, K. K. (1999). Recognize risk factors to prevent patient falls. Nursing Management, 30(5):37-40.

Tibbitts, G. M. (1996). Patients who fall: How to predict and prevent injuries. Geriatrics, 51(9):24-31.

Tideiksaar, R. (1996). Preventing falls: How to identify risk factors, reduce complications. Geriatrics, 51(2):43-53.

Tsai, Y., Witte, N., Radunzel, M., & Keller, M. L. (1998). Falls in a psychiatric unit. Applied Nursing Research, 11(3):115-121.

Turkoski, B., Pierce, L. L., Schreck, S., Salter, J., Radziewicz, R., Guhde, J., & Brady, R. (1997). Clinical nursing judgment related to reducing the incidence of falls by elderly patients. Rehabilitation Nursing, 22(3):124-130.

Vaughn, K., Young, B. C., Rice, F., & Stoner, M. H., (1993). A retrospective study of patient falls in a psychiatric hospital. Journal of Psychosocial Nursing, 31(9):37-41.

Wilson, E. B. (1998). Preventing patient falls. AACN Clinical Issues, 9(3):100-108.

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Contact:
Susan V. White, Ph.D., VP/Quality Management
Florida Hospital Association
407-841-6230 or susiew@fha.org

The practice model is available
on the FHA Web site at
www.fha.org/quality.html