



## General

### Guideline Title

Fall prevention. In: Evidence-based geriatric nursing protocols for best practice.

### Bibliographic Source(s)

Gray-Miceli D, Quigley PA. Fall prevention: assessment, diagnoses, and intervention strategies. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 268-97.

### Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Gray-Miceli D. Preventing falls in acute care. In: Capezuti E, Zwicker D, Mezey M, Fulmer T, editor(s). Evidence-based geriatric nursing protocols for best practice. 3rd ed. New York (NY): Springer Publishing Company; 2008. p. 161-98.

## Recommendations

### Major Recommendations

Levels of evidence (I–VI) are defined at the end of the "Major Recommendations" field.

#### Parameters of Assessment

- Assess and document all older adult patients for intrinsic risk factors to fall:
  - Advancing age, especially if older than 75
  - History of a recent fall
  - Specific comorbidities: dementia, hip fracture, type 2 diabetes, Parkinson's disease, arthritis, and depression
  - Functional disability: use of assistive device
  - Alteration in level of consciousness or cognitive impairment
  - Gait, balance, or visual impairment
  - Use of high-risk medications (Chang et al., 2004 [Level I])
  - Urge urinary incontinence (Brown et al., 2000 [Level III])
  - Physical restraint use (Capezuti et al., 2002 [Level III])
  - Bare feet or inappropriate shoe wear
  - Identify risks for significant injury due to current use of anticoagulants such as Coumadin, Plavix, or aspirin, and/or those with osteoporosis or risks for osteoporosis (Resnick, 2003 [Level VI])
- Assess and document patient-care environment routinely for extrinsic risk factors to fall and institute corrective action:

- Floor surfaces for spills, wet areas, unevenness
- Proper level of illumination and functioning of lights (night light works)
- Table tops, furniture, beds are sturdy and are in good repair
- Grab rails and bars are in place in the bathroom
- Use of adaptive aides work properly and are in good repair
- Bed rails do not collapse when used for transitioning or support
- Patient gowns/clothing do not cause tripping
- Intravenous (IV) poles are sturdy if used during mobility and tubing does not cause tripping
- Perform a postfall assessment (PFA) following a patient fall to identify possible fall causes (if possible, begin the identification of possible causes within 24 hours of a fall) as determined during the immediate, interim, and longitudinal postfall intervals. Because of known incidences of delayed complication of falls, including fractures, observe all patients for about 48 hours after an observed or suspected fall (ECRI, 2006 [Level VI]; Gray-Miceli et al., 2006 [Level III]; Panel on Prevention of Falls in Older Persons, American Geriatrics Society, & British Geriatrics Society, 2011 [Level I]).
  - Perform a physical assessment of the patient at the time of the fall, including vital signs (which may include orthostatic blood pressure readings), neurological assessment, and evaluation for head, neck, spine, and/or extremity injuries.
  - Once the assessment rules out any significant injury:
    - Obtain a history of the fall by the patient or witness description and document
    - Note the circumstances of the fall, location, activity, time of day, and any significant symptoms
    - Review of underlying illness and problems
    - Review medications
    - Assess functional, sensory, and psychological status
    - Evaluate environmental conditions
    - Review risk factors for falling (American Medical Directors Association [AMDA], 2003 [Level VI]; ECRI, 2006 [Level VI]; Resnick, 2003 [Level VI]; Panel on Prevention of Falls in Older Persons, American Geriatrics Society, & British Geriatrics Society, 2011 [Level I])
- In the acute-care setting, an integrated multidisciplinary team (comprised of the physician, nurse, health care provider, risk manager, physical therapist, and other designated staff) plans care for the older adult, at risk for falls or who has fallen, hinged upon findings from an individualized assessment (The Joint Commission, 2006 [Level V]; ECRI, 2006 [Level VI]).
- The process approach to an individualized PFA includes use of standardized measurement tools of patient risk in combination with a fall-focused history and physical examination, functional assessment, and review of medications (AMDA, 2003 [Level VI]; Resnick, 2003 [Level VI]; Panel on Prevention of Falls in Older Persons, American Geriatrics Society, & British Geriatrics Society, 2011 [Level I]). When plans of care are targeted to likely causes, individualized interventions are likely to be identified. If falling continues despite attempts at individualized interventions, the standard of care warrants a reexamination of the older adult and their fall.

## Nursing Care Strategies

- General safety precaution and fall prevention measures that apply to all patients, especially older adults:
  - Assess the patient care environment routinely for extrinsic risk factors and institute appropriate corrective action.
    - Use standardized environmental checklists to screen; document findings.
    - Communicate findings to risk managers, housekeeping, maintenance department, all staff and hospital administration, if needed.
    - Re-evaluate environment for safety (ECRI, 2006 [Level VI]).
  - Assess/screen older adult patient for multifactorial risk factors to fall on admission, following a change in condition, upon transfer to a new unit, and following a fall (ECRI, 2006 [Level VI]).
    - Use standardized or empirically tested fall risk tools in conjunction with other assessment tools to evaluate risk for falling (Panel on Prevention of Falls in Older Persons, American Geriatrics Society, & British Geriatrics Society, 2011 [Level I]; Tinetti, Williams, & Mayewski, 1986 [Level II]).
    - Document findings in nursing notes, interdisciplinary progress notes, and the problem list.
    - Communicate and discuss findings with interdisciplinary team members.
    - In the interdisciplinary discussion, include review and reduction or elimination of high risk medications associated with falling.
    - As part of fall protocol in the facility, flag the chart or use graphic or color display of the patient's risk potential to fall.
    - Communicate to the patient, the family caregiver identified risk to fall, and specific interventions chosen to minimize the patient's risk.
    - Include patient and family members in the interdisciplinary plan of care and discussion about fall prevention measures.
    - Promote early mobility and incorporate measures to increase mobility, such as daily walking, if medically stable and not otherwise contraindicated.

- Upon transfer to another unit, communicate the risk assessment and interventions chosen and their effectiveness in fall prevention.
- Upon discharge, review fall risk factors and measures to prevent falls in the home with the older patient and/or family caregiver. Provide patient literature/brochures if available. If not readily available, refer to the Internet for appropriate Web sites/resources.
- Explore with the older patient and/or family caregiver avenues to maintain mobility and functional status; consider referral to home-based exercise or group exercises at community senior centers. If discharge is planned to a subacute or rehabilitation unit, label on the transfer form the older adults mobility status at the time of discharge functional or other forms of physical activity in the home to strength lower extremities or assist with gait/balance problems.
- Institute general safety precautions according to facility protocol, which may include:
  - Referral to a falls prevention program
  - Use of a low rise bed that measures 14 inches from floor
  - Use of floor mats if patient is at risk for serious injury, such as osteoporosis
  - Easy access to call light
  - Minimization and/or avoidance of physical restraints
  - Use of personal or pressure sensor alarms
  - Increased observation/surveillance
  - Use of rubber-soled heeled shoes or nonskid slippers
  - Regular toileting at set intervals and/or continence program; provide easy access to urinals and bedpans
  - Observation during walking rounds or safety rounds
  - Use of corrective glasses for walking
  - Reduction of clutter in traffic areas
  - Early mobility program (ECRI, 2006 [Level VI])
- Provide staff with clear, written procedures describing what to do when a patient fall occurs.
- Identify specific patients requiring additional safety precautions and/or evaluation by a specialist, or:
  - Those with impaired judgment or thinking due to acute or chronic illness (delirium, mental illness)
  - Those with osteoporosis, at risk for fracture
  - Those with current hip fracture
  - Those with current head or brain injury (standard of care)
- Review and discuss with interdisciplinary team findings from the individualized assessment and develop a multidisciplinary plan of care to prevent falls (Chang et al., 2004 [Level I]).
  - Communicate to the physician significant PFA findings (ECRI, 2006 [Level VI]).
  - Monitor the effectiveness of the fall prevention interventions instituted.
  - Following a patient fall, observe for serious injury due to a fall and follow facility protocols for management (standard of care).
  - Following a patient fall, monitor vital signs, level of consciousness, neurological checks, and functional status per facility protocol. If significant changes in patient condition occurs, consider further diagnostic tests such as plain film x-rays, computed tomography (CT) scan of the head/spine/extremity, neurological consultation, and/or transfer to a specialty unit for further evaluation (standard of care).

#### Follow-up Monitoring of Condition

- Monitor fall incidence and incidences of patient injury due to a fall, comparing rates on the same unit over time.
- Compare falls per patient month against national benchmarks available in the National Database of Nursing Quality Indicators.
- Incorporate continuous quality improvement criteria into fall prevention program.
- Identify fall team members and roles of clinical and nonclinical staff (ECRI, 2006 [Level VI]).
- Educate patient and family caregivers about fall prevention strategies so they are prepared for discharge.

#### Definitions:

##### Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

AGREE Next Steps Consortium (2009). Appraisal of guidelines for research & evaluation II. Retrieved from <http://www.agreetrust.org?o=1397>

Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. Applied Nursing Research, 11(4) 195-206.

## Clinical Algorithm(s)

None provided

## Scope

### Disease/Condition(s)

Falls and injury from falls

### Guideline Category

Evaluation

Management

Prevention

Risk Assessment

### Clinical Specialty

Critical Care

Family Practice

Geriatrics

Nursing

Physical Medicine and Rehabilitation

Preventive Medicine

### Intended Users

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Hospitals

Nurses

Physical Therapists

Physician Assistants

Physicians

## Guideline Objective(s)

To provide a standard of practice protocol to:

- Prevent falls and serious injury outcomes in hospitalized older adults
- Recognize multifactorial risks and causes of falls in older adults
- Institute recommendations for falls prevention and management consistent with clinical practice guidelines and standards of care

## Target Population

Hospitalized older adults

## Interventions and Practices Considered

Assessment/Evaluation/Risk Assessment

1. Assessment and documentation of intrinsic risk factors
2. Assessment and documentation of patient-care environment and extrinsic risk factors
3. Individualized postfall assessment (PFA) and physical assessment following a patient fall
4. Additional safety precautions and/or evaluation by specialist

Management

1. General safety precaution and fall prevention measures
2. Multidisciplinary plan of care for prevention
3. Staff education regarding procedures to follow in the event of a fall
4. Follow-up monitoring

## Major Outcomes Considered

- Incidence and etiology of falls in acute care settings
- Morbidity and mortality associated with falls
- Level of mobility at discharge

## Methodology

### Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

### Description of Methods Used to Collect/Select the Evidence

Although the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (described in Chapter 1 of the original guideline document, *Evidence-based Geriatric Nursing Protocols for Best Practice*, 4th ed.) was created to critically appraise clinical practice guidelines, the

process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus, the AGREE instrument has been expanded (i.e., AGREE II) for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

### The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A literature search was conducted to find the best available evidence for each clinical question addressed. The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice protocol being developed.

In addition to rating each literature citation as to its level of evidence, each citation was given a general classification, coded as "Risks," "Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

### Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

## Number of Source Documents

Not stated

## Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

## Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

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Adapted from: Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. *Applied Nursing Research*, 11(4) 195-206.

## Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

## Description of the Methods Used to Analyze the Evidence

Not stated

## Methods Used to Formulate the Recommendations

Expert Consensus

## Description of Methods Used to Formulate the Recommendations

Not stated

## Rating Scheme for the Strength of the Recommendations

Not applicable

## Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

## Method of Guideline Validation

External Peer Review

Internal Peer Review

## Description of Method of Guideline Validation

Not stated

## Evidence Supporting the Recommendations

## References Supporting the Recommendations

American Medical Directors Association (AMDA). Falls and fall risk. Columbia (MD): American Medical Directors Association (AMDA); 2003. 16 p. [1 reference]

Brown JS, Vittinghoff E, Wyman JF, Stone KL, Nevitt MC, Ensrud KE, Grady D. Urinary incontinence: does it increase risk for falls and fractures? Study of Osteoporotic Fractures Research Group. *J Am Geriatr Soc*. 2000 Jul;48(7):721-5. [PubMed](#)

Capezuti E, Maislin G, Strumpf N, Evans LK. Side rail use and bed-related fall outcomes among nursing home residents. *J Am Geriatr Soc*. 2002 Jan;50(1):90-6. [PubMed](#)

Chang JT, Morton SC, Rubenstein LZ, Mojica WA, Maglione M, Suttrop MJ, Roth EA, Shekelle PG. Interventions for the prevention of falls in older adults: systematic review and meta-analysis of randomised clinical trials. *BMJ*. 2004 Mar 20;328(7441):680. [17 references] [PubMed](#)

ECRI. Falls prevention strategies in healthcare settings guide. Plymouth Meeting (PA): ECRI; 2006. 300 p.

Gray-Miceli DL, Strumpf NE, Johnson J, Draganescu M, Ratcliffe SJ. Psychometric properties of the Post-Fall Index. *Clin Nurs Res*. 2006 Aug;15(3):157-76. [PubMed](#)

Panel on Prevention of Falls in Older Persons, American Geriatrics Society, British Geriatrics Society. Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. *J Am Geriatr Soc*. 2011 Jan;59(1):148-57. [PubMed](#)

Resnick B. Preventing falls in acute care. In: Mezey M, Fulmer T, Abraham I, Zwicker DA, editor(s). *Geriatric nursing protocols for best practice*. 2nd ed. New York (NY): Springer Publishing Company, Inc.; 2003. p. 141-64. [25 references]

The Joint Commission. 2006 national patient safety goals. Oakbrook Terrace (IL): Joint Commission on Accreditation of Healthcare Organizations; 2006. 54 p.

Tinetti ME, Williams TF, Mayewski R. Fall risk index for elderly patients based on number of chronic disabilities. *Am J Med*. 1986 Mar;80(3):429-34. [PubMed](#)

## Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

## Benefits/Harms of Implementing the Guideline Recommendations

### Potential Benefits

#### Patient

- Maintenance of patient safety
- Avoidance of falls
- Absence of serious injury outcomes from falls that occur
- Knowledge of risks for falling
- Prepared at discharge to prevent falls at home
- Maintenance of prehospitalization level of mobility
- Prompt and appropriate assessment and treatment of fall-related complications, such as injury and change in cognitive function, to reverse aftermaths

#### Nursing Staff

- Accurate detection, referral, and management of older adults at risk for falling or who have experienced a fall

- Integration into practice of comprehensive assessment and management approaches for prevention of falls in the institution
- Gained appreciation for older adults' unique experience of falling and how it influences daily living, functional, physical, and emotional status
- Education of older adult patients anticipating discharge about falls prevention strategies

#### Family Caregivers

Added knowledge about fall prevention and sensitization and increased awareness of simple strategies to prevent falls

#### Health Care Organization

- Reduced fall and injurious fall rates
- Benefits of fall prevention programs that minimize liability
- Support of budgetary lines for fall prevention interventions directed to patients and health care staff

### Potential Harms

Not stated

## Implementation of the Guideline

### Description of Implementation Strategy

An implementation strategy was not provided.

### Implementation Tools

Chart Documentation/Checklists/Forms

Mobile Device Resources

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

## Institute of Medicine (IOM) National Healthcare Quality Report Categories

### IOM Care Need

Getting Better

Staying Healthy

### IOM Domain

Effectiveness

Patient-centeredness

Safety

# Identifying Information and Availability

## Bibliographic Source(s)

Gray-Miceli D, Quigley PA. Fall prevention: assessment, diagnoses, and intervention strategies. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 268-97.

## Adaptation

Not applicable: The guideline was not adapted from another source.

## Date Released

2003 (revised 2012)

## Guideline Developer(s)

Hartford Institute for Geriatric Nursing - Academic Institution

## Guideline Developer Comment

The guidelines were developed by a group of nursing experts from across the country as part of the Nurses Improving Care for Health System Elders (NICHE) project, under sponsorship of the Hartford Institute for Geriatric Nursing, New York University College of Nursing.

## Source(s) of Funding

Hartford Institute for Geriatric Nursing

## Guideline Committee

Not stated

## Composition of Group That Authored the Guideline

*Primary Author:* Deanna Gray-Miceli, PhD, GNP-BC, FAANP, Assistant Professor, Rutgers University, New Brunswick, NJ

## Financial Disclosures/Conflicts of Interest

Not stated

## Guideline Status

This is the current release of the guideline.

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## Guideline Availability

Electronic copies: Available from the [Hartford Institute for Geriatric Nursing Web site](#) .

Copies of the book *Evidence-Based Geriatric Nursing Protocols for Best Practice*, 4th edition: Available from Springer Publishing Company, 536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: [www.springerpub.com](http://www.springerpub.com) .

## Availability of Companion Documents

The following are available:

- *Try This*® - issue 8: Fall risk assessment for older adults: the Hendrich II Fall Risk Model. New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2013. Electronic copies: Available in Portable Document Format (PDF) from the [Hartford Institute of Geriatric Nursing Web site](#) .
- *Try This*® - issue 29: Assessment of fear of falling in older adults: the Falls Efficacy Scale – International (FES-I). New York (NY): Hartford Institute for Geriatric Nursing; 2 p. 2011. Electronic copies: Available in PDF from the [Hartford Institute of Geriatric Nursing Web site](#) .
- The Hendrich II Fall Risk Model. How to Try This video. Available from the [Hartford Institute of Geriatric Nursing Web site](#) .

The ConsultGerRN app for mobile devices is available from the [Hartford Institute for Geriatric Nursing Web site](#) .

## Patient Resources

None available

## NGC Status

This summary was completed by ECRI on July 30, 2003. The information was verified by the guideline developer on August 25, 2003. This summary was updated by ECRI Institute on June 23, 2008. The updated information was verified by the guideline developer on August 4, 2008. This NGC summary was updated by ECRI Institute on June 25, 2013. The updated information was verified by the guideline developer on August 6, 2013.

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