Preventing In-Facility Falls

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http://www.ahrq.gov
Introduction: Preventing In-Facility Falls

Prevent Falls
Learning Objectives

- Describe factors that place a patient at a greater risk of falling.
- List the common elements of multicomponent falls prevention interventions.
- Summarize the effectiveness of multicomponent in-facility falls prevention interventions.
- Describe the most consistently supported themes of implementation for falls prevention programs.
What to Expect

Framework and Format
- Conceptual framework and 8 questions that provided structure for the review

Background
- Definition, prevalence, causes, and outcomes of in-facility falls

Methods
- Grading the strength of a body of evidence

Results
- Summary of the literature review

Conclusions
- What was learned about falls prevention interventions

Available Resources
- Description of additional resources
Framework for Evidence Assessment of Patient Safety Practices
1. How important is the problem?
2. What is the patient safety practice?
3. Why should this patient safety practice work?
4. What are the beneficial effects of the practice?
Format for the Review

5. What are the harms of the patient safety practice?

6. How has the safety practice been implemented and in what contexts?

7. Are there any data about costs?

8. Are there any data about the effect of context on effectiveness?
Background: How Important is the Problem?
In-Facility Falls

✓ 1.3 to 8.9 falls per 1,000 bed-days

✓ >1000 falls per year in a large facility
Risk Factors
Consequences of Falls

➢ 30% to 50% of falls are associated with an injury

➢ Hip fractures occur in 1% to 2% of falls

➢ Increased health care utilization
  • Increased length of stay
  • Higher rates of discharge to institutional or long-term care facilities
Consequences of Falls

Fall
- Fear
- Anxiety
- Distress
- Depression
- Reduced Activity
**Strength of Evidence**

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>High</strong></td>
<td>• High confidence that the evidence reflects the true effect. Further research is very unlikely to change the confidence in the estimate of effect.</td>
</tr>
<tr>
<td><strong>Moderate</strong></td>
<td>• Moderate confidence that the evidence reflects the true effect. Further research may change the confidence in the estimate of effect and may change the estimate.</td>
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<tr>
<td><strong>Low</strong></td>
<td>• Low confidence that the evidence reflects the true effect. Further research is likely to change the confidence in the estimate of effect and is likely to change the estimate.</td>
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<tr>
<td><strong>Insufficient</strong></td>
<td>• Evidence either is unavailable or does not permit estimation of an effect.</td>
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What is the patient safety practice?
Components of Falls Prevention Interventions

- Alert wristband
- Bedside risk sign
- Hip protectors
- Staff education
- Patient education
- Bedrail review
- Restraints
- Footwear
- Toileting schedules
- Exercise
- Movement alarms
- Medication review
- Urine screening
- Post-fall review
- Modified environment
Environmental Modifications

- Low beds
- Firm mattresses
- Appropriate chair height and depth
- Armrests on chairs
- Secure handrails
- Nonslip surfaces on floor and tub
- Shower seats
- Grab bars by toilet and tub
- Armrests by toilet
- Toilet that allows easy transfer
- Door magnets to hold doors open
Why should this patient safety practice work?
Why Should In-Facility Falls Prevention Programs work?

**Environment**
- Examples: Room design, flooring type

**Care Process and Culture**
- Examples: Risk assessment, medication review, staff education

**Technology**
- Examples: Call button, bed alarm, footwear

**Intervention**
- Examples: Increases support, promotes standing stability

**Mechanism**
- Examples: Identifies at-risk patients or factors, increases awareness

**Outcome**
- Examples: Assists patient prompts, detects movement, reduces slips

**Reduces falls**

What are the Beneficial Effects of the Patient Safety Practice?
## Summary of Published Systematic Reviews

<table>
<thead>
<tr>
<th>Author, year</th>
<th>Number of studies</th>
<th>Inclusion criteria</th>
</tr>
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<tbody>
<tr>
<td>Cameron, 2008</td>
<td>4</td>
<td>Randomized controlled trials; older adults; nursing facilities and hospitals</td>
</tr>
<tr>
<td>Coussément, 2008</td>
<td>4</td>
<td>Prospective controlled trials; hospitals</td>
</tr>
<tr>
<td>Oliver, 2007</td>
<td>13</td>
<td>Randomized controlled trials, case-control studies, observational studies; care homes and hospitals</td>
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</table>
Pooled rate ratios from 3 meta-analyses ranged from 0.69 (95% CI: 0.49-0.96) to 0.82 (95% CI: 0.68-1.00)

• Sample size >1000
• Multicomponent interventions
• Acute care hospitals
• Dates: January 2005 – August 2011
Adjusted Fall Rates, all patients

- **Intervention Unit**: 3.15 falls per 1,000 patient-days
- **Control Unit**: 4.18 falls per 1,000 patient-days

Adjusted Fall Rate, \(\geq 65\) years old

- Rate difference between those over age 65 years and younger patients was 2.08 falls per 1,000 patient-days

New Evidence: Dykes, 2011
New Evidence: Ang, 2011

Proportion of Patients With At Least 1 Fall

- **Intervention group**: 0.4%
  (95% CI: 0.2%-1.1%)
- **Control group**: 1.5%
  (95% CI: 0.9%-2.6%)

Relative Risk Reduction

- 0.29 (95% CI: 0.1%-0.87%)
Relative Risk Reduction in Falls

- 0.69
- Insufficient power for reliable statistical analysis
What are the Harms of the Patient Safety Practice?
Most studies did not report harms

Possible harms:
- Increased use of restraints
- Increased use of sedative drugs
How Has the Patient Safety Practice Been Implemented, and in What Contexts?
Structural Organizational Characteristics

- **Settings**
  - Acute care
  - Long-term care
  - Rehabilitation
  - Geriatric

- **Countries**
  - 2 in United States
  - 5 in Australia
  - 2 in Singapore
  - 9 in Europe

- **Sample Size**
  - 3 were <100 beds
  - 5 were 100-500 beds
  - 2 were >500 beds
Existing Infrastructure

• Few data exist regarding the existing infrastructure needed to support falls prevention programs.
• Only 5 studies described the existing quality and safety infrastructure.
• There is likely to be diversity among different institutions as to what constitutes “usual care.”
• Only 4 studies provided information regarding external factors such as patient safety culture, teamwork, or leadership.

• Strong leadership support of the intervention may play an important role in successful implementation of a falls prevention program.
Implementation Details

Who Performed Risk Assessments?

- Ward staff: 17 studies
- Research staff: 2 studies

Who Performed Intervention?

- Multiple professionals: 7 studies
- Nursing staff only: 8 studies
- Research staff: 1 study
Implementation Details

- 13 studies described tools and materials used for implementation
- 8 studies reported adherence to the designed program
- 5 studies described how and why a plan evolved
- 6 studies provided adoption and reach data for providers
- 8 studies provided adoption and reach data for patients
Additional Articles on Implementation
Implementation Themes

- Leadership support
- Engagement of frontline staff
- Multidisciplinary committees
- Pilot testing
- Informational technology systems
- Changing the prevailing defeatist attitude
- Education and training
Leadership Support

Clinical Champion

Senior Leadership Involvement
Frontline Engagement

- Staff involvement in choosing equipment
- Staff and physician input to project design
- Nurses revising guidelines
Multidisciplinary Committees

- Composed of clinical and research staff
- Hold regular meetings
- Analyze outcomes
Pilot Testing

- Identify problems
- Evaluation by committee
- Intervention modified before full implementation
Informational Technology Systems

- Tool to assess fall risk and tailor interventions
- Interface between medical records and event reporting system
Attitude Change

Reluctance to impose intervention and skepticism about program

Belief that falls are normal part of aging and hospitalization

Belief that falls are unpredictable and unavoidable accidents
Education and Training

- Posters
- Videos
- Printed materials
- Post-training evaluations
Are There Any Data About Costs?
Are There Any Data About the Effect of Context on Effectiveness?
Conclusions

What did we learn?
Inpatient multicomponent programs have been shown to be effective at reducing falls. 

[Strength of Evidence: High]
Conclusions

Leadership support
- Facility-level and unit-level leadership support is critical.

Frontline staff involvement
- Frontline clinical staff involvement in design of program facilitates a program that blends with existing operations.

Multidisciplinary teams
- Most interventions involved multidisciplinary teams.

Pilot testing
- Pilot testing was performed before full-scale implementation.
Conclusions

Informational Technology Systems

- Implement informational technology systems to expedite evaluations of the causes of falls and to monitor compliance.

Change Attitudes

- Change the attitudes of frontline staff so they accept that falls are predictable and preventable.

Education and Training

- Provide adequate time for ongoing education and training of clinical staff to help ensure that compliance does not diminish.
Patient Safety Practice Summary

- **Scope of Problem**
  - Frequency: Common
  - Severity: Low

- **Strength of Evidence for Effectiveness**
  - High

- **Potential for Unintended Consequences**
  - Moderate

- **Cost**
  - Moderate

- **Implementation Issues**
  - How much do we know? Moderate
  - How hard is it? Moderate
Additional Resources

Improving Patient Safety in Long-Term Care Facilities

Preventing Falls in Hospitals
A Toolkit for Improving Quality of Care
Improving Patient Safety in Long-Term Care Facilities: Falls Prevention and Management

- Student workbook and instructor’s guide
- Directed towards nurses and nursing assistants

Preventing Falls in Hospitals: A Toolkit for Improving Quality of Care

- Toolkit of resources for planning, implementing, and sustaining a falls prevention program in a hospital
- Designed for multiple audiences

Continuing Education
• To obtain credit:
  ► Complete the online evaluation.
  ► Pass the posttest with a grade of 75% or higher.

If you have any problems receiving certification, please contact:

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