Fall and Injury Prevention: Best Practices

Pat Quigley, PhD, MPH, ARNP, CRRN, FAAN, FAANP
Associate Director, VISN 8 Patient Safety Center
Associate Chief for Nursing Service/Research

E-Mail: patricia.quigley@med.va.gov
Objectives

• Illustrate Relationship of Complementary Perspectives of Evidence-based Practice
• Translate Actionable Elements of a Fall Prevention Program
• Segment Vulnerable High Risk Populations to Prevent Injury
• Organize 2 strategies to implement and evaluate Evidence-based Practices to Prevent Falls and Reduce Severity of Injury
Integration of Complementary Perspectives

Knowledge → Innovation Diffusion → Knowledge Transfer → Outcome

Knowledge Transfer → Evidence-based Practice
Three Perspectives

Evidence-based Practice (Sackett)
“...the conscientious use of current best evidence in making decisions about the care of individual patients or the delivery of health services.”

Innovation Diffusion (Rogers)
The process of communicating new ideas through certain channels over time among members of a social system

Knowledge Transfer (Dixon)
Sharing of common knowledge, that is the knowledge that employees learn from doing the organization’s tasks.
Overview

1. Differentiate Prevention vs. Protection
2. Brief description of our Patient Safety Research Center
3. State of Science related to patient falls
4. Why we have not “cracked the code” for preventing patient falls
5. New and Emerging Research on patient falls
Prevention

• The act of preventing, forstalling, or hindering
Protection

• Shield from exposure, injury or destruction (death)
• Mitigate or make less severe the exposure, injury or destruction
Clinical trial to test interventions

Is evidence strong enough to warrant practice change?

Yes

Implement evidence-based practice

No

Does evidence support clinical trials?

Yes

Clinical trial to test interventions

No

Epidemiological study to identify modifiable risk factors for adverse events or descriptive studies to understand process and outcomes

Technology Transfer

Is equipment ready for Market?

OR

Equipment design or redesign
<table>
<thead>
<tr>
<th>Types of Research: Evidence Hierarchies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agency for Healthcare Research and Quality (AHRQ)</strong></td>
</tr>
<tr>
<td>Level I</td>
</tr>
<tr>
<td>Level II</td>
</tr>
<tr>
<td>Level III</td>
</tr>
<tr>
<td>Level IV</td>
</tr>
<tr>
<td>Level V</td>
</tr>
<tr>
<td>Strength of Evidence</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>I</td>
</tr>
</tbody>
</table>
Role of RCTs

- Parachute use to prevent death and major trauma related to gravitational challenge: systematic review of randomised controlled trials
- Gordon C S Smith, Jill P Pell
- *BMJ* 2003;327
Would you want to be randomized or not?
Who dies if they fall?

- Very young and very old
AGS Guidelines 2010

Assessment

1. Obtain relevant medical history, physical examination, cognitive and functional assessment
2. Determine multifactorial fall risk:
   a. History of falls
   b. Medications
   c. Gait, balance, and mobility
   d. Visual acuity
   e. Other neurological impairments
   f. Muscle strength
   g. Heart rate and rhythm
   h. Postural hypotension
   i. Feet and footwear
   j. Environmental hazards
   [ F ]

Interventions

Initiate multifactorial/multicomponent intervention to address identified risk(s) and prevent falls:

1. Minimize medications
2. Provide individually tailored exercise program
3. Treat vision impairment (including cataract)
4. Manage postural hypotension
5. Manage heart rate and rhythm abnormalities
6. Supplement vitamin D
7. Manage foot and footwear problems
8. Modify the home environment
9. Provide education and information
Must Reads:

• *Clinics in Geriatric Medicine*, Nov. 2010.


Must Reads:

• *Journal Nursing Care Quality, 2012.*
  

• *Clinical Risk, 2012.*
  

- 30% to 51% of falls result with some injury
- 80% - 90% are unwitnessed
- 50%-70% occur from bed, bedside chair or transferring between the two; whereas in mental health units, falls occur while walking
- Risk Factors: Recent fall, muscle weakness, behavioral disturbance, agitation, confusion, urinary incontinence and frequency; prescription of “culprit drugs”; postural hypotension or syncope
Best Practice Approach in Hospitals

- Implementation of safer environment of care
- Identification of specific modifiable fall risk factors
- Implement interventions targeting those risk factors so as to prevent falls
- Implement interventions to reduce risk of injury to those people who do fall
Ambulatory Care

• AGS, BGS Clinical Practice Guidelines 2010:

  • Assessment
  • Interventions
  • Evidence Grades
  • Bibliography
  • www.americangeriatrics.org/health_care_professionals/clinical_practice/clinical_guidelines_recommendations/2010
Who is not at risk for falls and harm?

• Risk Screening
• Risk Assessment
• Differential Diagnosis
• Range of Severity
Accident Theory
Protect from Injury

Protecting Patients from Harm: Our Moral Imperative
In-Patient Settings: Prevent Falls and Protect from Injury

• What is Risk Assessment?
• Universal Fall Precautions
• Segment Populations by Risk
• Patient Centered Care: Health Literacy Actions
• Intervene on Modifiable Intrinsic Risk Factors
• Intervene on Modifiable Extrinsic Risk Factors
• Multi-disciplinary Care Planning
• Rapid Response Team (Nursing or Multidisciplinary)
• Special Emphasis Populations (Cognitively Impaired, >75 yoa, Radiation Treatment, Newly Disabled, who else?)
• Risk for Injury
Interventions

1. Basic preventive and universal falls precautions for all patients

2. Assessment of all patients for risk of falling and sustaining injuries from a fall in the hospital

3. Cultural infrastructure

4. Hospital protocols for those identified at risk of falling

5. Enhanced communication of risk of injury from a fall

6. Customized interventions for those identified at risk of injury from a fall
Universal Injury Prevention

• Educates patients / families / staff
  – Remember 60% of falls happen at home, 30% in the community, and 10% as inpts.
  – Take opportunity to teach
• Remove sources of potential laceration
  – Sharp edges (furniture)
• Reduce potential trauma impact
  – Use protective barriers (hip protectors, floor mats)
• Use multifactorial approach: COMBINE Interventions
• Hourly Patient Rounds (comfort, safety, pain)
• Examine Environment (safe exit side)
5 Essentials to Protect from FRI

Programmatic Shift

Change in assessment structures: add risk for FRI and Hx of FRI

Change in interventions: Environmental Redesign

Assess to protective interventions

Organizational Support

You can protect patients from injurious falls
### Fall Prevention and Injury Reduction Matrix
(Assumes Universal Falls Prevention Implemented)

<table>
<thead>
<tr>
<th>RISK OF FALL</th>
<th>RISK OF INJURY FROM A FALL</th>
<th>+ RISK FALL/-- RISK INJURY</th>
<th>--RISK FALL/--RISK INJURY</th>
<th>--RISK FALL/+RISK OF INJURY</th>
<th>+ RISK FALL/+ RISK INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td>+</td>
<td>Implement fall reduction interventions</td>
<td>Implement injury prevention interventions</td>
<td>Assess, intervene and communicate if <em>injury risk</em> changes</td>
<td>Assess, intervene and communicate if <em>fall risk or injury risk</em> changes</td>
<td>Implement fall reduction interventions</td>
</tr>
<tr>
<td>- LOW</td>
<td>--RISK FALL/--RISK INJURY</td>
<td>--RISK FALL/+ RISK OF INJURY</td>
<td>Assess, intervene and communicate if <em>fall risk</em> changes</td>
<td>Assess, intervene and communicate if <em>fall risk</em> changes</td>
<td>Implement injury prevention interventions</td>
</tr>
</tbody>
</table>

*Note: Universal Falls Prevention Implemented means baseline interventions are always in place.*
What to Put in Place

Injury Risk Assessment

Injury Prevention Interventions

Interventions specific to Injury Risk

Resources:
http://www.visn8.va.gov/patientsafetycenter/fallsTeam/default.asp
Moderate to Serious Injury

Those that limit function, independence, survival

Age (85 yoa)

Bones (fractures)

antiCoagulation (bleeds/hemorrhagic injury)

Surgery (post operative)
Technology Resource Guide: Bedside Floor Mats
Hip Protector Toolkit Resource

http://www.visn8.va.gov/patientsafetycenter/fallsTeam/default.asp
Best Practice: Hip Protector Toolkit
Best Practice: Patient Education Video
Osteoporosis in Men

This 15 minute video is targeted for men with osteoporosis, addressing myths, diagnosis, treatment, and healthy living for prevention of osteoporosis in men.
Best Practice
Patient Education Brochure
“Anticoagulation: Preventing Injurious Falls”

- Risk for falls
- Practical strategies to prevent injuries
- Actions to take if one falls
- Fall prevention strategies
Best Practice
Clinical Tools for Preventing Falls in Gero-Psychiatry

- Peer Leader Toolkit
- Organizational Self Assessment
- Communication Handoff Tool
- Criteria for Bed Selection
Safety Huddles

• Post Fall Analysis
  – What was different this time?
  – When
  – How
  – Why
  – Prevention: Protective Action Steps to Redesign the Plan of Care
Health Literacy

How many patients understand what we tell them or give them to read? According to the research, about 52%

Health Literacy Definition: The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.

(Ratzan and Parker, 2000)

IOM Report: Health Literacy: A Prescription to End Confusion 2004
healthliteracy@ama-assn.org
“Teach Back”

• “Teach Back” Testing: what are the trends in patients’ difficulty to understand what is taught?

Ask the patient to describe or repeat back in his or her own words what has just been told or taught. Use return demonstration.
Biomechanics of Fall-Related Injuries

Understanding the “rate of splat” and its impact on injury
Summary of Results

Feet First Fall from Bed

- No Floor Mat fall over top of bedrails: ~40% chance of severe head injury
- No Floor Mat, low bed (No Bedrails): ~25% chance of severe head injury
- Low bed with a Floor Mat: ~ 1% chance of severe head injury
Bedside Mats – Fall Cushions

CARE Pad
bedside fall cushion

NOA Floor Mat

Posey Floor Cushion

Tri-fold bedside mat

Roll-on bedside mat

Soft Fall bedside mat
Technology Resource Guide: Bedside Floor Mats

- Bedside floor mats protect patients from injuries associated with bed-related falls.
- Targeted for VA providers, this web-based guidebook will include: searchable inventory, evaluation of selected features, and cost.
Hip Protectors – Examples

- Safehip
- KPH
- CuraMedica
- HipGuard
- HIPS
Hip Protector Toolkit

- This web-based toolkit will include:
  - prescribing guidelines
  - standardized CPRS orders
  - selection of brands and models
  - sizing guidelines
  - protocol for replacement
  - policy template
  - laundering procedure
  - stocking procedure
  - monitoring tools
  - patient education materials
  - provider education materials
Assistive technology for safe mobility-Bed & Chair Monitors

AirPro Alarm
Locator Alarm
Bed & Chair Alarm
Chair Sentry

Economy Pad Alarm
Floor Mat Monitor
Keep Safe
QualCare Alarm
Safe-T Mate Alarmed Seatbelt
Wheelchair-Related Falls

- Current Fall-Risk Assessment tools not effective
- Features of Wheelchairs contribute to risk
- Most common site of injury is NOT hip, but rather fractures of extremities
- Head injury/mortality
Testing on a *Small Scale*

- Remember to actually try out new ideas before implementing them.
- Break-down New Changes into a series of small tests - that you will study and modify if needed.
- **No** important change will “fit” your system perfectly.
- You want to “work out the bugs” in the new change before you implement it.
What to do When you Fall...
Pat And Her Mom

Getting ready to dance