Should Zero Falls be the Goal? A New Era for Reducing Injurious Falls and Healthy Aging

Featuring Hackensack Meridian Health using the Hendrich II Fall Risk Model®

September 10, 2020

Hosted by The American Hospital Association
Presenters

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## Questions to Think About…

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<table>
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<tr>
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<td>Is your fall risk assessment part of your medical problem list or is it a “patient safety event and a nursing problem”?</td>
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<td>Are the risk factors person-centered with evidence-based interventions and interprofessional practice?</td>
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One View of Aging...What is yours?
Age and Aging: Differing Views

2016, then 93-year-old Ernie became the oldest person ever to run across America — from San Diego, California, all the way to Saint Simons Island, Georgia.

“I was running three days a week, but it’s the same old thing. And I just got a little bored,” he said. He recently got so restless, he decided to do something remarkable. On Saturday, at the age of 95, Ernie will return to the Georgia beach where his run ended — to start a new run back across the country. His last run took three years. He expects this one to take a little longer and hopes to reach San Diego sometime after his 100th birthday.

**AUGUST 2020 UPDATE**

Ernie Andrus, who turns 97 next week, still marching across America averaging 4 miles a day. He plans to reach Pacific on 101st birthday and he is “planning a coast to coast relay after that”


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## Hendrich II Fall Risk Model® Risk Factors

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Risk Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confusion/Disorientation/Impulsivity</td>
<td>4</td>
</tr>
<tr>
<td>Symptomatic Depression</td>
<td>2</td>
</tr>
<tr>
<td>Altered Elimination</td>
<td>1</td>
</tr>
<tr>
<td>Dizziness/Vertigo</td>
<td>1</td>
</tr>
<tr>
<td>Gender (Identifies as Male)</td>
<td>1</td>
</tr>
<tr>
<td>Any Administered Antiepileptics (anticonvulsant)</td>
<td>2</td>
</tr>
<tr>
<td>Any Administered Benzodiazepines</td>
<td>1</td>
</tr>
<tr>
<td>Get-Up-and-Go Test: Rising from a chair</td>
<td>0-4</td>
</tr>
</tbody>
</table>

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Risk Factors

The Hendrich II Fall Risk Model® has EIGHT risk factors to help predict fall risk. They include:

5 intrinsic risk factors

2 classes of drugs

1 simple gait and balance test to assess and score the patient’s mobility

*Side effects of medications allowed many categories to be statistically eliminated without losing predictive validity—See 2019 Beer’s List Criteria

A focus on the cause of each risk factor can help the clinician reduce, stabilize, or eliminate modifiable risk factors.

*Must be part of a comprehensive assessment

Validation Study 2020

Validation of the Hendrich II Fall Risk Model: The imperative to reduce modifiable risk factors

Ann L. Hendrich (PhD, RN, FAAN)\textsuperscript{a,b,c,*}, Angelo Bufalino (PhD)\textsuperscript{b}, Clariecia Groves (DEng, CHDA)\textsuperscript{a}

\texttt{https://doi.org/10.1016/j.apnr.2020.151243}

- 36-month consecutive time period- large integrated healthcare system, 2,600 sites of care in 21 states and the District of Columbia, 151 hospitals, behavioral health, skilled, rehabilitation, and more than 50 senior care facilities
- Data abstracted from electronic record tested with the Hendrich II Model for psychometric analysis
- Fall and non-fall (control) populations for statistical tests
  - Non-falls=214,358 Falls=492
- Nine hospitals-consecutive admissions
  - 25 to 474 beds with all levels and types of care represented for the facilities included
- Pediatrics and zero scores (not scored) excluded from study
Deconditioning and Readmissions: Intrinsic Risk Factors and Immobility

We must shift our perspective to treat fall risk factors in the same way we assess, diagnosis, and evaluate disease states or the complications of a disease.

Fall risk factors should become part of their relational care plan and be addressed by an interprofessional team across the continuum. Falls are a leading cause of 30-day readmissions points to the lack of continuum of care coordination and follow-ups necessary to prevent fall-related injuries (Hoffman et al., 2019).

During a hospitalization, older adults spend upwards of 95% of their time immobile. 12% decline in aerobic capacity and a 16% decline in knee extensor strength.

At that rate, it takes precious little time for an older adult without much reserve to slip below the level of functional independence.

In practical terms, this means that many older adults who were living independently before they were hospitalized for a medical illness, like pneumonia or heart failure, are unable to return home.
A Continuum of Care Model

Using fall risk factors to promote safe mobility and healthy aging

1. ASSESS/UNDERSTAND/ESTABLISH

Hendrich II Fall Risk Model®
- 5 intrinsic risk factors
- 2 classes of medication
- 1 simple gait and balance test

Understand what matters to the person

Establish historical baseline and use standardized tools to set a baseline for diagnosis and comparison

2. DIAGNOSE/INTERVENE/MONITOR/REASSESS

Diagnose and identify causes

Monitor for changes and reassess

Apply evidence-based interventions (general and specific) for risk factors to establish a care plan that will promote safe mobility and healthy aging

3. TRANSITION

Incorporate evidence-based interventions throughout the care continuum


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Two Frameworks: High Reliability and the Age-Friendly 4Ms
Overall Goal of Age-Friendly Health Systems:

Build a social movement so all care with older adults is age-friendly care:

• Guided by an essential set of evidence-based practices (4Ms);
• Causes no harms; and
• Is consistent with What Matters to the older adult and their family.

Specific Aims:

By end of 2020: Reach 20% of US healthcare ~1000 hospitals & practices

*More information can be found at IHI.org/AgeFriendly.
To join the Age-Friendly Health Systems movement, email AFHS@ihi.org.
# The 4Ms Framework

Age-Friendly care is the reliable implementation of a set of evidence-based geriatric best practice interventions across four core elements, known as the 4Ms, to all older adults in your system.

<table>
<thead>
<tr>
<th>The 4Ms</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What Matters</strong></td>
<td>Know and align care with each older adult’s specific health outcome goals and care preferences including, but not limited to end-of-life care, and across settings of care</td>
</tr>
<tr>
<td><strong>Medication</strong></td>
<td>If medication is necessary, use Age-Friendly medications that do not interfere with What Matters to the older adult, Mobility, or Mentation across settings of care</td>
</tr>
<tr>
<td><strong>Mentation</strong></td>
<td>Prevent, identify, treat, and manage dementia, depression, and delirium across settings of care</td>
</tr>
<tr>
<td><strong>Mobility</strong></td>
<td>Ensure that older adults move safely every day to maintain function and do What Matters</td>
</tr>
</tbody>
</table>

Applying the 4Ms to Risk Factors that Matter

The Hendrich II Fall Risk Model® Eight Risk Factors that Matter

- Confusion/Disorientation/Impulsivity
- Dizziness/Vertigo
- Symptomatic depression
- Any administered antiepileptics (anticonvulsant)
- Any administered benzodiazepines
- Get-Up and Go Test
- Altered elimination
- Gender (male)

Predict. Prevent. Preserve What Matters™

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Fall Risk Interventions

Evidence-based interventions that target individual risk factors for falling have been shown to reduce injurious falls and promote falls self-efficacy.

Interventions targeting delirium reduction can reduce falls by 64%. (Hshieh et al 2015)

Nursing alone cannot reduce fall related injuries and support safe mobility.

• Organizations that take a whole-house approach accelerate improvement. (Miake-Lye et al 2013)

The term “non-compliant” is overused.

• 50-88% of patients do not believe they are at risk for a fall in the hospital. (Twibell et al 2015, Sonnad et al 2014)

• Evidence supports that structured education about risk and consequences can reduce falls and injuries by 45-100% with cognitively intact patients. (Li-Chi Huang 2015, Haines et al 2011)
Risk Factor One-Confusion

- **Not a diagnosis** — Signals a need for cognitive screening and in-depth assessment.

- **Delirium** or **Dementia** or other pathophysiological condition?
  - **Delirium** – acute confusional state and encephalopathy (inability to redirect, focus, and sustain attention, “easily distracted”)
  - **Dementia** – slowly progressive over months to years with fewer fluctuations

- Those with cognitive impairment are highly susceptible to delirium during hospitalization, post-operatively, and after discharge from the hospital.
  - We now recognize one can be superimposed on the other and delirium may place the person at greater risk of dementia

- Recognition of the condition can help identify modifiable risk factors.

- Early diagnosis is a challenge due to the subtle nature.

- Individuals and families still prefer early diagnosis. (van den Dungen et al. 2014)
Confusion

Interprofessional Team Interventions

- Review history carefully for length of time and symptom origination.
- Think Sepsis and rule it out with provider and interprofessional care team.
- Has hearing and vision been fully evaluated?
- Review all medications for possible side effects, correct dosages and administration, and efficacy.
- Opioids and alcohol misuse and abuse should be part of the history.
- Consider using a standard tool to set baseline for comparison—the 2-item Ultabrief (UB) Delirium Screen©. (Fick et al, JHM 2015)
  1. Please tell me day of the week.
  2. Please tell me the months of the year backward, say December as your first month.
Symptomatic Depression

Interprofessional Team Interventions

- Assessment for depression and mistreatment
  - Patient Health Questionnaire (PHQ-9)
  - Beck Depression Inventory (21 items)
  - Geriatric Depression Scale (5 items)
  - Psychological, physical, sexual, neglect
- Medication review
  - Compliance and appropriateness
- Look and listen for somatic symptoms
  - Insomnia
  - Fatigue
  - Chronic pain

- Recognize risk taking and suicidal thoughts/plans
  - Environmental safety
  - Substances at bedside (Thick-It, hand cleansers, pain patches)
- Appropriate monitoring and discharge planning
- Community resources that match where they live
  - Activities
  - Groups
  - On-line resources for community and connection
  - Alexa and Siri

Differential Diagnoses:
The 3 D’s in the Older Adult

- Depression
- Delirium
- Dementia

Mini-Cog assessment to detect cognitive impairment in older adults, Saint Louis University Mental Status, (SLUMS) examination for detecting mild cognitive impairment and dementia, Montreal Cognitive Assessment (MOCA)

Later in life depression (LLD)

- Depressive episodes after age 60

- Not a natural process of aging and age but associated with:
  - Chronic disease
  - Loss of friends and spouse
  - Financial challenges
  - Disparity in care (race, ethnicity, age)
Altered Elimination

**Causes**

- Bladder and bowel
  - Urgency
  - Urinary retention
  - Acute or chronic
  - Frequency
  - Incontinence
  - Diarrhea
  - Constipation

**Interprofessional Team Interventions**

- History and duration
- Bladder scanner
- Dehydration
- Infection
- Stool softeners
- Nutrition
- Medication side effects
- Time of medication administration?
Dizziness and Vertigo

Causes

• Medication side effects
• Inner ear conditions
• Central Nervous System impairments
• Head injuries
• Infections
• Metabolic changes
• Anemia
• Generalized weakness secondary to a disease state or immediately following a surgical or interventional procedure outpatient areas, or in the hospitalized patient
• Postural changes

Interprofessional Team Interventions

• Review medications and dosages.
• Check ear canals.
• Teach patient to sit at the side of the bed or chair for a moment to be sure they are not dizzy.
• Review lab values for possible dehydration, anemia, metabolic changes, orthostatic vital signs and check for arrhythmias, which can be masked in the older adult.
• Dehydration – fluids and ability to manage containers (opening, swallowing).

Gender (Identifies as Male)

- The “go it alone” factor for ambulation and toileting and being able to manage self at home.

- The Hendrich study determined male gender to be an independent fall risk factor. Simply being male does not create an increased risk of falling.

- For example, some men may be more likely to take risks, do it alone, ignore instructions, or refuse assistance from a female nurse or any care provider.

- There can also be differences in cultures, race, and ethnicity.
Antiepileptics and Benzodiazepines

The two classes of drugs that are exceptions to this rule are **antiepileptics** and **benzodiazepines**. They always incrementally increase fall risk in hospitalized patients if present with other risk factors.

Patients who take these two classes of drugs are more at risk for falling due to the impact on the central nervous system and drug side effects.

In order for a benzodiazepine or antiepileptic medication to be scored, the medication must be administered not just ordered.
Things to Consider About Medications

- Most common side effects of medications across all populations
  - Sedation or altered sensorium
  - Nausea, vomiting
  - Heart palpitations
  - Altered elimination
  - Dizziness or vertigo
  - Changes in gait and balance

- Medication adherence
  - Disparity impact
  - Depression
  - Cognitive status

- Polypharmacy
  - Multiple medications that may be unnecessary, ineffective, or not clinically indicated (Hamilton, Gallagher, Ryan, Byrne & O’Mahoney 2011)

- Deprescribing
  - Systematic removal of inappropriate medications supervised by a healthcare professional (Reeve, Gnijdic, Long, and Hilmer 2015)
Things to Consider About Medications

Interprofessional Team Interventions

- Medication assessment is an important strategy to identify and reduce polypharmacy in older adults.
  - “What matters most to you?”
- Over the counter medications, herbal, and dietary supplements must also be considered.
- Beers Criteria
  - Appropriateness
  - Drug to drug interactions
- STOP – Screening of Older People’s Prescriptions (O’Mahoney et al 2015)
- START – Screening Tool to Alert to Right Treatment (O’Mahoney et al 2015)

Get-Up-and-Go Test

• The study determined that just one portion of this entire test, rising from a sitting position and taking a few steps turning around and walking back to the seat, was sufficient to predict an increased fall risk.
• Scores range from 0-4
• A standardized mobility tool should be a minimum standard of care for a baseline and daily comparisons
Gait and Mobility
Interprofessional Team Interventions

- Vitamin D3 1000 IU per day (USPTF recommends against routine vitamin D supplementation in otherwise healthy community-dwelling older adults)
- Go4Life Fitness Program (https://go4life.nia.nih.gov/)
- Tai Chi
- HELP-Hospital Elder Life Program
  https://www.hospitalelderlifeprogram.org/ -Mobility Action Group Change Package and Toolkit
- Otago Therapy Program
- Non-pharmacologic interventions for behavioral and psychological symptoms of dementia (BPSD) and deprescribing of high-risk drugs (e.g., benzodiazepines, antipsychotics, anti-seizure drugs)
- Evaluate for postural hypotension.
- Correct for vision, hearing, sensory impairments.
- Evaluate for and treat depression.
- Assistive devices (poorly fitted or improper use may contribute to falls!)
- At home consider environmental factors (e.g., footwear, rugs, electric cords, pets).
- Evaluate for risky behaviors.


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HIIFRM elements

The HIIFRM consists of a risk factors assessment, care pathways, and care plans specific for each risk factor, in addition to an electronic health record (EHR) map.

HIIFRM assessment
Assesses person’s risk factors

Care pathways
Step-by-step process for each HIIFRM risk factor.

Care plans
Process for identifying the potential cause and associated interventions for each risk factor.

EHR map
Designed to support utilization of care pathways and care plans.

Critical thinking:
Identifying the reason(s) for the person’s risk factor(s) is an important step that differentiates HIIFRM from other models and will assist your organization to successfully promote safe mobility and prevent
Care Pathway for Confusion/Disorientation/Impulsivity

## Care Plan and Interventions for Confusion/Disorientation/Impulsivity

### Fall Risk Factor 1: Confusion/Disorientation/Impulsivity Care Plan

<table>
<thead>
<tr>
<th>Potential cause</th>
<th>Diagnose</th>
<th>Apply evidence-based interventions (general and specific) as part of the care plan to manage/improve risk factor</th>
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<tbody>
<tr>
<td></td>
<td>Additional information</td>
<td>Utilize tests and evidence-based assessment tools, where available, to confirm the diagnosis with the provider.</td>
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#### Delirium
- **Definition**: An acute confusional state and encephalopathy, e.g., inability to redirect, focus, and sustain attention, “easily distracted.”
- **Onset**: Acute and usually occurs within hours or days, with fluctuations occurring during the day.
- **Characteristics**: Those with cognitive impairment (e.g., dementia) are highly susceptible to delirium during hospitalization, post-operatively, and after discharge from the hospital.

#### Dementia
- **Definition**: Like delirium, dementia limits an individual’s ability to direct, focus, and sustain attention. However, dementia develops over a longer period (months/years) with fewer fluctuations and is irreversible.

#### Optional tools:
- **Confusion Assessment Method (CAM)**
- **CAM for the Intensive Care Unit (CAM-ICU)**
- **2-Item Ultra-Brief (UB-2)**

**Delirium Screen** (Fick et al., *Journal of Hospital Medicine*, 2015):
- Please tell me the day of the week.
- Please tell me the months of the year backward, say December as your first month.
- Check oxygen levels.

**Note**: Recognition of the condition can help identify modifiable risk factors, but early diagnosis is a challenge due to its subtle nature.

#### Dementia
- **Complete a detailed history and physical (H&P).**
- **Assess for Alzheimer’s or cerebrovascular disease.**
- **Consider delirium added to dementia or Alzheimer's diagnosis.** Utilize tools noted in delirium.

**Optional tools:**
- **Mini-Cog assessment** to detect cognitive impairment in older adults
- **Saint Louis University Mental Status (SLUMS) examination** for detecting mild cognitive impairment and dementia
- **Montreal Cognitive Assessment (MoCA)**

#### Additional tips:
- Ensure sufficient oral hydration (see dehydration interventions).
- Reorient patient/resident to person, place, time, and situation:
  - Make sure day of week and date are updated and visible in the room.
  - Provide a working clock with large face visible to the person.
  - Bring familiar items from home to keep room recognizable.
- Ensure person has their personal adaptive equipment (e.g., glasses, hearing aids, dentures, walkers).
- Prevent sleep interruptions by avoiding overnight vital checks and blood draws unless necessary.
- Use nonpharmacological interventions to support sleep, e.g., earplugs, sleeping masks, muscle relaxation such as hand massage, posture and relaxation training, white noise and music, and educational strategies.
- Consult with team to avoid or minimize high-risk medications.
- Provide a consistent routine.
- Administer medications as ordered.
- Utilize music therapy specific to the person’s music interests.
- Consider gentle reorientation or use of orienting cues; avoid repeated testing about orientation if the person appears agitated.
- See delirium interventions.
# Care Plan and Interventions for Confusion/Disorientation/Impulsivity

## Fall Risk Factor 1: Confusion/Disorientation/Impulsivity Care Plan

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<tbody>
<tr>
<td>Sepsis/infection</td>
<td>Sepsis:</td>
<td>✓ Integrate confusion assessment into sepsis order sets and protocols.</td>
</tr>
<tr>
<td></td>
<td>✓ Temperature above 100.9°F or below 96.8°F</td>
<td>✓ Monitor vital signs, WBC, wound/surgical sites for signs and symptoms of infection.</td>
</tr>
<tr>
<td></td>
<td>✓ Heart rate ≥ 111 bpm</td>
<td>✓ Consult with interprofessional care team regarding use of antibiotics based upon signs and symptoms and culture results.</td>
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<tr>
<td></td>
<td>✓ Respiration ≥ 23/min</td>
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<tr>
<td></td>
<td>✓ Shaking</td>
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</table>

### General infection:
- ✓ Assess for signs and symptoms of infection (temperature, increased white blood count [WBC], wound/surgical site with pus, etc.)
- ✓ Wound/surgical site culture.

### Medication side effects, including impact of polypharmacy
- Older adults are more sensitive to medication side effects and may not take their medication consistently.
- Polypharmacy is described as taking five or more medications; most common in age 65+ and impacts 40% of older adults.

<table>
<thead>
<tr>
<th>Optional tools:</th>
<th>Partner with interprofessional care team to identify opportunities to deprescribe medication and/or adjust medication dosage levels.</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Geriatrics Society, Updated Beers Criteria for Potentially Inappropriate Medication Use in Older Adults</td>
<td>Optional tool: <a href="http://www.deprescribing.org">www.deprescribing.org</a> guidelines for the algorithm on deprescribing benzodiazepines</td>
</tr>
<tr>
<td>STOPP/START criteria for potentially inappropriate prescribing in older people, version 2</td>
<td>Consider use of nonpharmacologic/integrative treatment to support sleep and manage pain, such as aromatherapy, massage, music therapy, etc.</td>
</tr>
<tr>
<td></td>
<td>Partner with interprofessional care team to avoid or minimize use of benzodiazepines for treatment of delirium based upon research evidence. <a href="https://deliriumnetwork.org">https://deliriumnetwork.org</a></td>
</tr>
</tbody>
</table>

### Metabolic changes/liver failure
- The aging nervous system is vulnerable to metabolic changes.

| Serum blood chemistry panel for electrolyte evaluation and liver function tests (LFTs). | Monitor electrolytes and LFTs. |
| Complete detailed history and physical (H&P). | Review primary care provider’s initial evaluation and treatment. |
| Assess sclera and skin for jaundice. | Consult endocrinologist or hepatologist as needed for further evaluation and treatment. |
| Palpate abdomen for abdominal distention and right upper quadrant pain. | If abdominal distension is present, monitor abdominal girth. |

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Snapshot of Hackensack Meridian Health

Not-for-profit health care organization that is the largest, most comprehensive and truly integrated health care network in New Jersey.

- 34,100 employees
- 8,000+ nurses
- 6,500 physicians
- 17 hospitals, a behavioral health hospital, and 2 rehabilitation hospitals
- 500 other patient care locations, including 16 long-term care facilities and multiple homecare and hospice agencies
Appendix
# Questions to Run On...

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<th>1</th>
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<tbody>
<tr>
<td><strong>Is your fall risk assessment part of your medical problem list or is it a “a patient safety event and a nursing problem”?</strong>&lt;br&gt;Does the assessment guide interventions that are person-centered?</td>
<td><strong>Are the risk factors addressed with evidence-based interventions and interprofessional practice?</strong>&lt;br&gt;How do you use high reliability principles and event reporting data for analysis and continuous improvement?</td>
<td><strong>Are there any unintended consequences of your “fall program”?</strong>&lt;br&gt;What role does language play in your environment with desired behavior change? <strong>“Safe Mobility Team” vs. “Fall Committee”</strong></td>
<td><strong>What should the goal be for injurious falls?</strong>&lt;br&gt;Does your culture and practice promote “only zero falls”?</td>
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# Injurious Fall Reduction

## Five questions that matter …

<table>
<thead>
<tr>
<th>Action Items</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1. Do you deliver appropriate mobility, reduction, and injurious fall knowledge to care providers and targeted education to patients and persons?</td>
<td></td>
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<tr>
<td>2. How do you evaluate injurious falls and ‘true’ root causes to measure your program’s effectiveness? (knowledge, skills, rule-based behaviors)</td>
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<tr>
<td>3. Is there a team approach to fall reduction? (pharmacy, clinicians, therapists, discharge planners, risk/clinical collaboration) and does the culture demonstrate this?</td>
<td></td>
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<tr>
<td>4. Are fall interventions aligned with modifiable predictive risk factors?</td>
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<tr>
<td>5. Is there a continuous quality improvement approach, evaluations of interventions, changes in risk scores, rounding with the interdisciplinary team?</td>
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</table>

FALLS are the second leading cause of accidental or unintentional INJURY DEATHS worldwide.¹

Approximately one in four patients who fall in hospitals suffer an injury as a result of the fall², including fractures, lacerations, excessive bleeding, and head trauma.

Almost 50 million AMERICANS are 65 and older, comprising 15% of total population³ and, on average, a 65 year old can expect to live another 20 years.⁴

DEATH RATES related to falls increased by 30% between 2007 and 2016 for older adults.⁵

If rates continue to rise, we can expect 7 fall deaths every hour by 2030.⁶

The average hospital cost FOR A FALL INJURY is about $30,000, and the costs of treating fall injuries goes up with age.⁷

In 2015, the annual DIRECT MEDICAL COSTS for fall injuries was $50 BILLION.


1. World Health Organization, 2018
2. Bouldin et al., 2013
3. Roberts et al., 2018
4. Arias & Xu, 2019
5. Burns & Kakara, 2018
6. Centers for Disease Control and Prevention, n.d.
7. Burns et al., 2016
8. Florence et al., 2018
Hendrich II Fall Risk Model®

• 25 years of research, validation, and replication studies for predicting risk factors.

• Original study
  • Fall and non-falls
  • The model is based on a rigorous study by the Hendrich research team conducted over a 2-year period with 1,232 adult fall and non-fall participants in a large tertiary hospital, Level I trauma center, with a long-term care center, rehabilitation and behavioral health.
  • 600 risk factors assessed concurrently with each patient by trained registered nurses using standardized instruments with each study participant.
High-Risk Threshold Assessment of the Hendrich II Fall Risk Model®

Patients with a fall risk score of greater than 5 are currently considered high-risk.
Fall Risk Assessment: Frequency and Reassessment

After the initial assessment, reassess all patients during each shift or visit whenever the patient condition changes.

In home and senior living – subtle changes can be a strong indicator of impending risk.

Assessing only once per shift may not be enough given the short length of stay and complexity of care in today’s hospitals.

Include repeated observation and assessment in hourly rounding as a way to detect changes in condition(s) and meet elimination needs before they cause a fall.

For example, side effects may appear after medication administration and increase fall risk. Surgical and procedural patients that have sedation and/or analgesics risk factors can change frequently. Patients on anticoagulants or with osteoporosis may be at higher risk for injuries (bleeds and fractures) from any fall.

This should be done even if patients were not shown to be at high risk for falls, as patient conditions will fluctuate greatly throughout a hospital stay.

The nurse always has the ability to place any patient on fall precautions if clinical judgment indicates the need to do so regardless of score.

Predict. Prevent. Preserve What Matters™
Gender (Identifies as Male)

Gender Validation

- In 2016, there were 103,864 unintentional deaths for men, including 39,810 from poisoning, including drugs; 27,447 from traffic crashes; and 17,370 from falls. That compares with 57,510 unintentional deaths for women, including 18,525 from poisoning, 11,301 from motor vehicle crashes and 17,303 from falls.
- Men are twice as likely to drink and drive as women, according to the AAA Foundation for Traffic Safety’s 2017 Traffic Safety Culture Index, an annual survey that studies driver attitudes and behaviors.
- Not a simple explanation…but very measurable.

Interprofessional Team Interventions

- Hendrich (2013) interviewed 100 male patients who fell and could measure risk taking, but when told “they might get injured and not be the same”.
  - All said they would have not taken the risk.
- Speak clearly and directly about what could happen.
- Ask about gender preferences for toileting help.
- Explore fears openly...ask why?
**Fall Risk Factors**

### Delirium

Delirium (acute confusion) is common in older adults and leads to poor outcomes, such as death, clinician and caregiver burden, and prolonged cognitive and functional decline (Witlox et al., 2010; Fick et al., 2013).

Delirium occurs in 29-64% of hospitalized older adults (Inouye et al., 2014) and increases the risk of an inpatient fall in this population 4.55 times (Pendlebury et al., 2015).

### Medication

**MEDICATION USE IS ONE OF THE MOST READILY MODIFIABLE FALL RISKS.**

Taking multiple medications of any type (called “polypharmacy” in the scientific literature), and psychotropic drugs in particular, is associated with an increased risk for falls.

**Most common side effects of medication across all populations:**
- Sedation or altered sensorium
- Nausea, vomiting
- Heart palpitations
- Altered elimination
- Dizziness or vertigo
- Changes in gait and balance

Almost 40% of older adults in the US, 65 or older, use five or more drugs a day (National Center for Health Statistics, 2019). Every day, 750 older adults in the US are hospitalized because they experience serious side effects from one or more medications. Over the past decade, older adults sought medical treatment more than 35 million times for adverse drug events, resulting in more than 2 million hospital admissions. Older adults are hospitalized for adverse drug events at a higher rate than the population as a whole is hospitalized for adverse events related to opioids (Lown Institute, 2019).

### Mobility

Older adults are vulnerable to falls when we don’t encourage mobility (National Council on Aging, n.d.).
Why do people fall?

There are three categories of fall risk factors:

1. Nonpredictable
   Nonpredictable risk factors are responsible for a small percentage of patient falls. These include:
   - postural hypotension and fainting
   - cardiac arrhythmia
   - seizure
   - transient ischemic attack (TIA)
   - cerebrovascular accident (CVA)

2. Extrinsic
   Extrinsic risk factors are environmental conditions, such as wet or uneven surfaces, cords, IV poles, and stepstools. Also, people are more likely to fall if they are not wearing skidproof socks or shoes. Persons with vision or hearing deficits, which includes many older adults, are at even higher risk of falling in unsafe environments.
   Bottom line—environmental safety is a priority in all areas. By keeping a person’s physical environment safe, falls caused by extrinsic risk factors are often prevented.

3. Intrinsic
   Intrinsic risk factors are a person’s characteristics, conditions, or medical diagnoses that can be objectively measured or evaluated. Such intrinsic factors “travel” with the individual and may include lower extremity weakness, impaired balance, and poor vision, as well as abnormal gait and mobility.
   An intrinsic fall can be complicated by unsafe environments or extrinsic/environmental factors. Some older adults are more at risk for intrinsic falls due to changes in mentation, impaired mobility, possible incontinence concerns, and polypharmacy. These intrinsic fall risk factors are predictable and preventable and are the focus of the Hendrich II Fall Risk Model.

Addressing both extrinsic and intrinsic fall risk factors is necessary to fully optimize healthy aging and personal safety.
## Categories of Safety Event Causes: Injurious Falls

<table>
<thead>
<tr>
<th>Knowledge Deficit</th>
<th>Skills</th>
<th>Behavior or rule-based behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Risk Factors that Matter</td>
<td>• “Know how”</td>
<td>• Assessment and reassessment parameters not followed</td>
</tr>
<tr>
<td>• Nursing and the healthcare team</td>
<td>• Management of cognitive changes or conditions in any environment</td>
<td>• Interventions not introduced</td>
</tr>
<tr>
<td>• Cause and Effect relationships versus correlation</td>
<td>• Competency-the “what now” “time” based deficit</td>
<td>• Ageism and bias</td>
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**Predict. Prevent. Preserve What Matters.™**
# High Reliability and a Framework for Injurious Fall Reduction

1. **Preoccupation with failure**

2. **Reluctance to simplify** explanations for operations, successes, and failures

3. **Sensitivity to operations** *(situation awareness)*

4. **Deference to frontline expertise**

5. **Commitment to resilience**

Risk Factors Normalized: Interventions for Modifiable Risk Factors Not Present

Under recognition of risk factors and root cause (confusion)

Patient fall

Nurse

Physician

Hearing and Vision Loss

Impact of hearing and vision loss in the US
Together or separately, hearing and vision loss contribute to dementia, increased mortality, and decreased quality of life and independence.

25% of adults 65-74 experience disabling hearing loss*

Three themes in qualitative study†:
- Passivity
- Frustration with family
- Health care communications difficulties

1 in 28 adults over 40 have low vision or blindness—cataracts, macular degeneration, diabetic retinopathy, glaucoma‡

*National Institute on Deafness and Other Communication Disorders, 2016.
† Funk et al., 2018.

Kotter Model of Change

There are many models that define and outline how managers can implement transformational change in their organizations. One model that has gained wide acceptance is Harvard professor John Kotter’s 8-Step Process for Leading Change, first published in his 1996 book, *Leading Change*. It is a broad model that addresses how to:

- **create the climate** for change, beginning in the design phase
- **engage and enable** the organization in the transition/implementation phase
- **implement and sustain** change over time

**Kotter’s Accelerated 8-Step Process for Leading Change**

1. **CREATE** a sense of urgency
2. **BUILD** a guiding coalition
3. **FORM** a strategic vision and initiatives
4. **ENLIST** a volunteer army
5. **ENABLE** action by removing barriers
6. **GENERATE** short-term wins
7. **SUSTAIN** acceleration
8. **INSTITUTE** change

**THE BIG Opportunity**

Resources

• AGS/BGS Clinical Practice Guidelines

• John A Hartford Foundation: Building Age Friendly Healthcare Systems

• STEADI (Stopping Elderly Accidents, Deaths, and Injuries)
  - [https://www.cdc.gov/steadi/index.html](https://www.cdc.gov/steadi/index.html)

• AGS Consensus Statement on vitamin D supplementation

• Handbook of Geriatric Assessment (5th Edition) Fulmer and Chernof 2018
  - [HELP: https://www.hospitalelderlifeprogram.org/](https://www.hospitalelderlifeprogram.org/)