

# Evidence Based Fall Prevention

**Only Leaves Should Fall**



# Continuing Education Credit

## Registering for Drive University

Please provide your contact information by scanning the QR code below or clicking on the url link and filling out the survey:



<https://www.surveymonkey.com/r/Drive-CEU>

**drive**

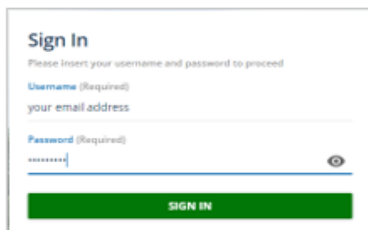
**drive**

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HEALTHCARE

# Continuing Education Credit

## Completing Your Evaluation

1. When your user account is set up, you'll receive an email with a link.  
You can also access Drive University at the URL <https://university.drivemedical.com/>
2. Enter your credentials (your username is your email [address](#) and your password is 4training.)



Sign In

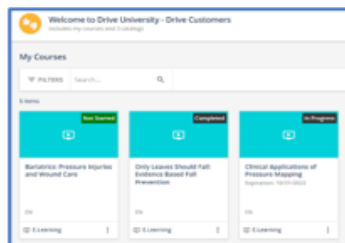
Please insert your username and password to proceed

Username (Required)  
your email address

Password (Required)  
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**SIGN IN**

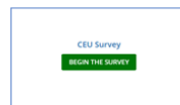
3. Click **SIGN IN**.
4. Click on the appropriate CEU course you attended:



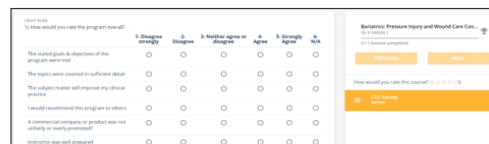
5. Click **START LEARNING NOW**.



6. Click **BEGIN THE SURVEY**.



7. Answer all survey questions.



Survey questions

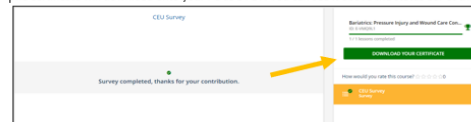
Strongly Disagree	Disagree	Neutral Agree or Disagree	Agree	Strongly Agree	Rate
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How would you rate this course? 0 0 0 0 0 0

**CEU Survey**

8. Click **SUBMIT**.

9. You will receive a message that the survey was completed. Click **DOWNLOAD YOUR CERTIFICATE**.  
The certificate will download onto your PC as a PDF. You can see it above the status bar at the bottom left on your screen.



2 weeks (10/20/23) to complete survey and download CE certificate

# No Conflicts

Karen A. Lerner, RN, MSN, ATP, CWS  
Clinical VP for Drive DeVilbiss Healthcare

Monetary support received from Drive DeVilbiss Healthcare



*drive*




*drive*

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# Objectives

- List and explain at least 3 evidence-based fall prevention interventions
- Discuss the clinical significance of fall prevention strategies
- Identify at least 3 ways to use DME to help decrease fall risk

# Key Resources

- Agency for Healthcare Research and Quality (AHRQ) 
- American Occupational Therapy Association (AOTA) 
- Centers for Disease Prevention and Control (CDC) 
- American Nurses Association (ANA) 

# Key Resources

World guidelines for falls prevention and management for older adults: a global initiative: the Task Force on Global Guidelines for Falls in Older Adults

**Coordinated  
Care Plan to  
Prevent Older  
Adult Falls**



Centers for Disease  
Control and Prevention  
National Center for Injury  
Prevention and Control

**STEADI** Stopping Elderly Accidents,  
Deaths & Injuries  
[www.cdc.gov/steadi](http://www.cdc.gov/steadi)

AHRQ's Safety Program for  
Nursing Homes:  
On-Time Falls Prevention

**Preventing Falls  
With Occupational  
Therapy - AOTA**



Trusted evidence.  
Informed decisions.  
**Better health.**

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# True or False?

- The risk of falling increases with age? **True**
- Most falls occur before breakfast? **False**
- The bed in the lowest horizontal position reduces falls? **False**
- Bed rails are safe for persons trying to get out of bed without help **False**
- If a person starts to fall, caregivers should try to prevent the fall **False**
- Helping co-workers with their patients is an important part of teamwork? **True**



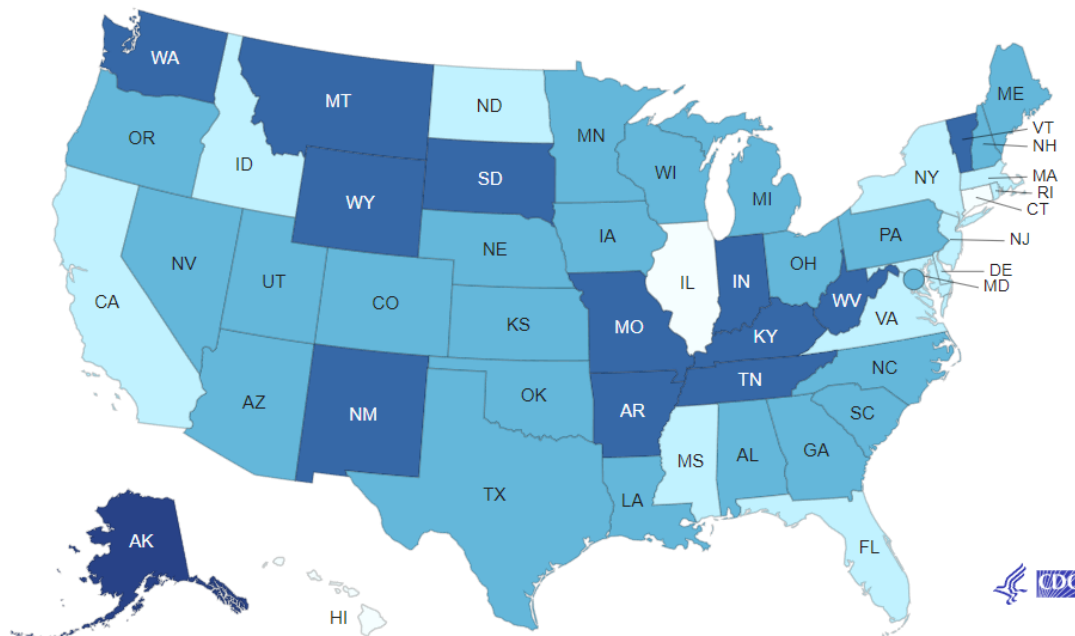
# Fall Definition

- An unplanned descent to the floor with or without injury to the patient The National Database of Nursing Quality Indicators (NDNQI, 2020)  
American Physical Therapy Association
- Any event that leads to an unplanned, unexpected contact with a supporting surface, such as the floor or a piece of furniture, that is *not* the result of a push or shove or the result of a medical event, such as a heart attack or fainting
- **A near-fall** is a stumble or loss of balance that would result in a fall if you were unable to catch yourself
- **Nursing Dx of fall risk**: Increased susceptibility to falling that may cause physical harm

# Older Adult Falls by State

Year

2020 ▾



Age-Adjusted Fall Percentages\*

19.9% - < 23.5%

23.5% - < 27.1%

27.1% - < 30.8%

30.8% - < 34.4%

34.4% - 38.0%

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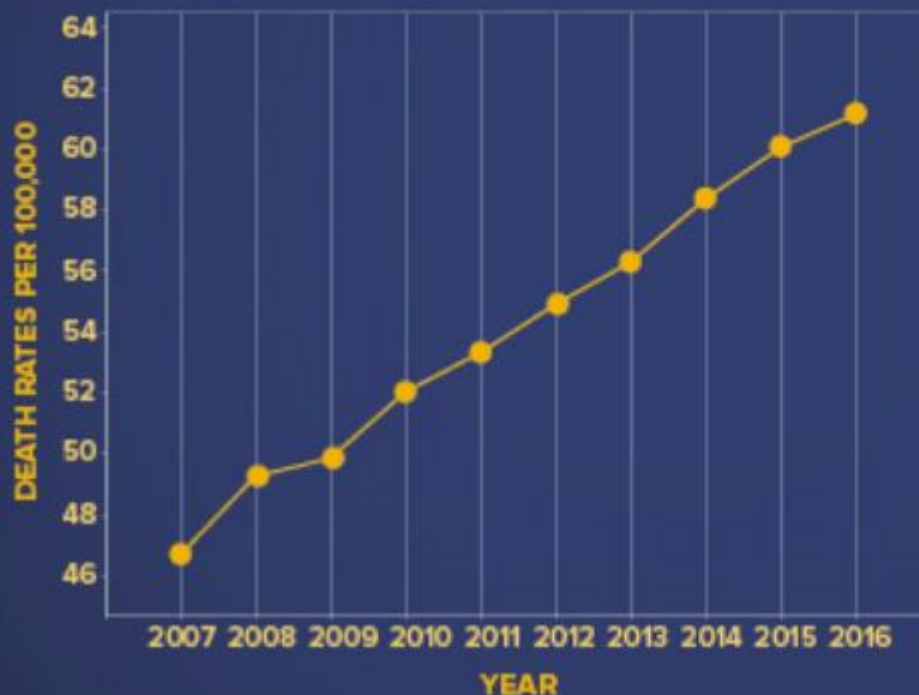
# US Fall Statistics

- **1 out of every 3** people, 65 years & over fall each year
- Among US residents age  $\geq 65$ , death rate from falls continues to climb steadily; 31% increase between 2007 – 2016 & growing at a particularly rapid rate among those aged  $\geq 85$
- 16,000 older Americans die as a result of fall related injuries every year
- Hospitalization cost for a fall injury ~ \$34,294 (2012 dollars)
- Cost of falls injuries: (2018)
  - Non-Fatal \$50 billion
  - Fatal \$750 billion

# Fall Death Rates in the U.S.

## INCREASED 30%

FROM 2007 TO 2016 FOR OLDER ADULTS



If rates continue to rise,  
we can anticipate

**7 FALL  
DEATHS**  
EVERY HOUR  
BY 2030

Learn more at [www.cdc.gov/HomeandRecreationalSafety](http://www.cdc.gov/HomeandRecreationalSafety).



# Nursing Home Falls and Fractures

NEWS | Legal Matters

## Operators feeling impact of rising liability costs: study

BY JOHN ROSZKOWSKI

The frequency and total cost of liability claims continue to rise for skilled nursing and senior living operators, a new national benchmarking report finds.

The 2022 liability study published by the consulting firm Willis Towers Watson analyzed data from more than 15,000 claims against skilled nursing and senior living clients. The facilities reported \$2.3 billion in incurred losses from those claims over the past 10 years.

Per-incident costs have been rising nearly 12% annually since 2016, due to the frequency and total cost of claims.

While the average severity — or cost-per-incident — declined 3.4% to \$140,000 in this year's study compared to the previous year, the authors cautioned that a backlog in court cases due to the pandemic and related factors were likely causes for the drop.

"The decline in severity may be related to the potential carryover from COVID, when courts were shut down, cases were backlogged, and beds remained empty," said Maryann McGivney, Healthcare & Life Sciences Industry vertical leader at WTW. "The study data cuts off at 2021, so there is a lag between the data and the current environment."

Resident falls were by far the largest and most frequent driver of claims and total



Photo: Scorpio/Getty Images

Resident falls, wound care and medical management issues led claims through 2022.

costs, followed by wounds/ulcers, medical management and infection claims. Choking claims resulted in the highest average severity at \$300,000, but the number of those claims was relatively small.

The study also found the number of claims over \$1 million is growing.

The study also reported significant variations in the frequency and total costs of claims in different states. States without tort reform or that allow plaintiffs to recover significant punitive damages and attorney fees typically reported higher costs and more frequent claims, while states which enacted tort reform or civil caps tended to have lower average claims. ■

## Why Bring a Nursing Home Fall Lawsuit?



SENIOR JUSTICE  
LAW FIRM

### Nursing Home Falls Cause Injury & Death

## Are Nursing Homes Legally Liable for Allowing a Resident to Fall?



NURSING HOME  
ABUSE JUSTICE

### Is a Nursing Home Liable for Falls? - Nursing Home Fall Attorneys

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# CMS & Falls

- 10/08 the Centers for Medicare & Medicaid Services (CMS) stopped reimbursing hospitals for costs related to patient falls
- The CMS no-pay policy increased utilization of fall prevention strategies despite little evidence these measures prevent falls
- **No quantitative research on whether the CMS no-pay policy influenced fall prevention practices**

# Joint Commission

## 6 Main Organizational Issues

- Inadequate assessment
- Communication failures
- Lack of adherence to protocols & safety practices
- Inadequate staff orientation, supervision, staffing levels or skill mix
- Deficiencies in physical environment
- Lack of leadership



**The Joint Commission.** (2017). Sentinel alert data. General information. Quarter 2 update. Retrieved from [https://www.jointcommission.org/assets/1/18/SEA\\_55.pdf](https://www.jointcommission.org/assets/1/18/SEA_55.pdf)



# CDC Fall Related Outcomes



Fear of falling:

- Limit activities
- Reduced mobility
  - Loss of physical fitness increases actual risk of falling

# Don't shame or aim for 100%

September 13, 2018

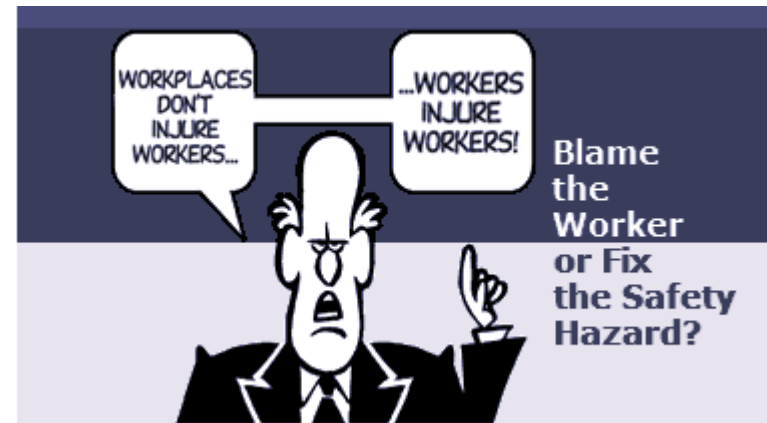
'Alarm fatigue' cited as reason for resident death

**McKnight's**



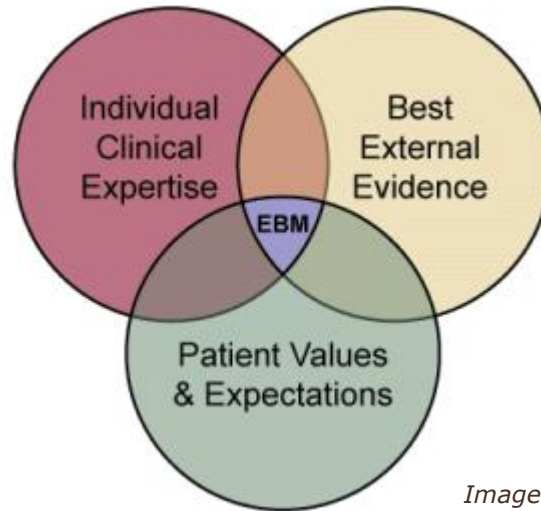
## Discipline Without Punishment

Harvard Business Review



<https://www.nursingrepository.org/bitstream/handle/10755/621219/AMoses.FinalManuscript2017.pdf;jsessionid=7E2A528A20BA80399C0E2C04465FF31D?sequence=3>

# Evidence Based Practice



*Image by Jenny Garcia, W.R. Coe Library, University of Wyoming*

Evidence based practice (EBP) is '**the integration of best research evidence with clinical expertise and patient values**' which, when applied by practitioners will ultimately lead to improved patient outcomes

# Clinical Judgment vs. EBP

Institute of Medicine - 2020 Goal

90% of clinical decisions will be supported by accurate, timely & up-to-date clinical information & will reflect the best available evidence to achieve the best patient outcomes

[https://hbr.org/2019/01/the-art-of-evidence-base](https://hbr.org/2019/01/the-art-of-evidence-based)  
<https://news.osu.edu/evidence-based-health-ca>

18%

?% of clinical r...ions are  
evidence-based

# Evidence Based?

- Benefits of:
  - Annual physicals
  - Mammograms
  - Prostate specific antigen (PSA)
  - NPWT over “conventional” wound care
- Standards of care:
  - Q2 hour turning/repositioning
  - Regularly offering LTC residents water



# To help prevent falls

*1 correct answer*

- Keep bed rails up on all resident beds?
- Report unsafe equipment at end of shift?
- Answer signal lights promptly?
- Wipe up spills when finish assignment?

# Conclusive Evidence

- Everyone falls
- Aging is a risk factor for falls
- Serious injury as consequence of fall dramatically increases  $\geq 65$  yo





# Conclusive Evidence

- As we age, our capacity to accept risk increases
- Our perceived control of acceptable risk goes away



# Conclusive evidence

- Fall risks are multifactorial
- Effective fall prevention programs are interdisciplinary

Most organizations still rely on universal, nurse-led methods that are ineffective & create a false sense of safety

**Result:** Falls remain one of the most frequent & harmful health events among the inpatient population

# Fall Risk Factors

## INTRINSIC | Factors

- Advanced age
- Previous falls
- Muscle weakness
- Gait & balance problems
- Poor vision
- Postural hypotension
- Chronic conditions including arthritis, stroke, incontinence, diabetes, Parkinson's, dementia
- Fear of falling



## EXTRINSIC | Factors

- Lack of stair handrails
- Poor stair design
- Lack of bathroom grab bars
- Dim lighting or glare
- Obstacles & tripping hazards
- Slippery or uneven surfaces
- Psychoactive medications
- Improper use of assistive device

# Hearing Loss and Falls

- People with mild hearing loss are 3x more likely to fall
- More severe the hearing loss = higher fall risk
- Wear hearing aids and eyeglasses (if needed)
- Use assistive devices
- Stay active
- Fall –proof home



# Risk factors for unanticipated physiological falls

No tool exists to assess risk for injury from unanticipated falls

- Seizures
- Syncopal episodes
- Delirium
- Greatest risk of injury:  $\geq 85$ , osteoporosis, patients taking anticoagulants



# Where Do Most Falls Occur in Nursing Homes?

- Dining room?
- Patient & resident rooms?
- Therapy rooms?
- Hallways?



# Where Do Falls Occur at Home?

- Living rooms (31 percent of falls)
- Bedrooms (30 percent)
- Kitchens (19 percent)
- Bathrooms (13 percent)
- Hallways (10 percent)

*National Health Interview Survey of 1997 & 1998*



# Most Common Home Fall Hazards

Slippery surfaces

Obstacles in traffic ways

Poor lighting (add lighting or use brighter bulbs)

Reaching – Climbing

Steps & Stairs (put railings on both sides)

Pathways

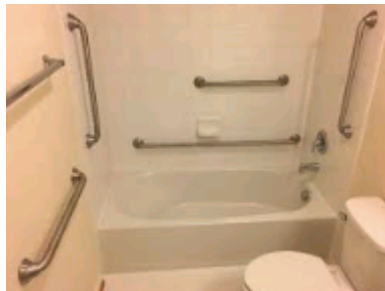
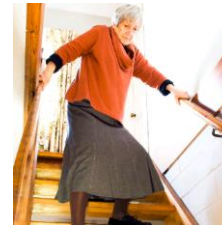
Floor mats

Footwear

Bath (add grab bars to inside and outside of tub, shower, toilet)

Spills on floor

*Clemson 1997*



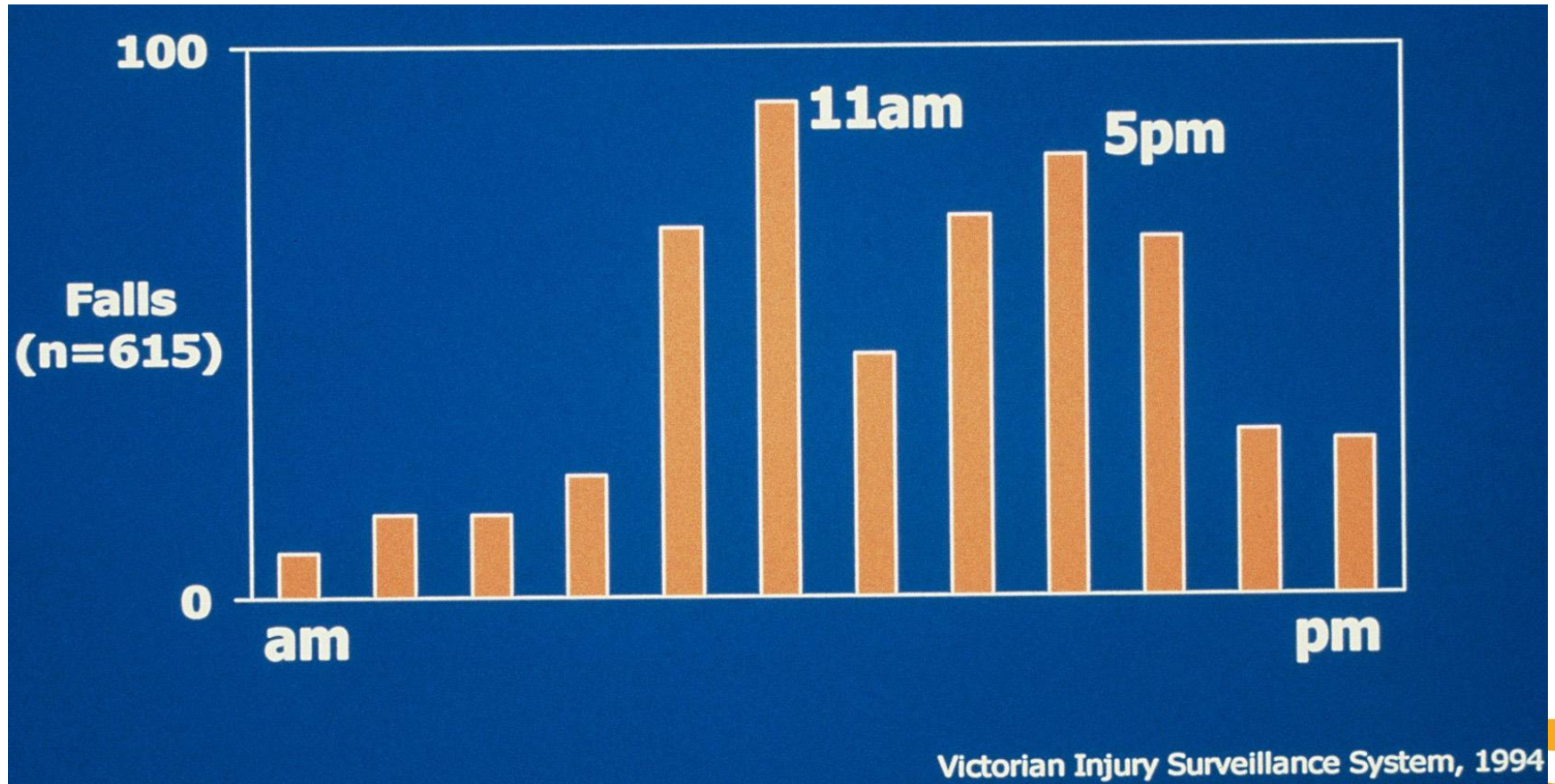
# Most Common Nursing Home Fall Hazards

- Ineffective wheelchair locks
- Missing equipment parts
- Poor lighting
- Poorly fitted/maintained wheelchairs
- Uneven floors
- Unstable bed wheels
- Too high beds
- Cluttered living spaces
- Hard to manage clothing
- Unstable furniture
- Wet floors

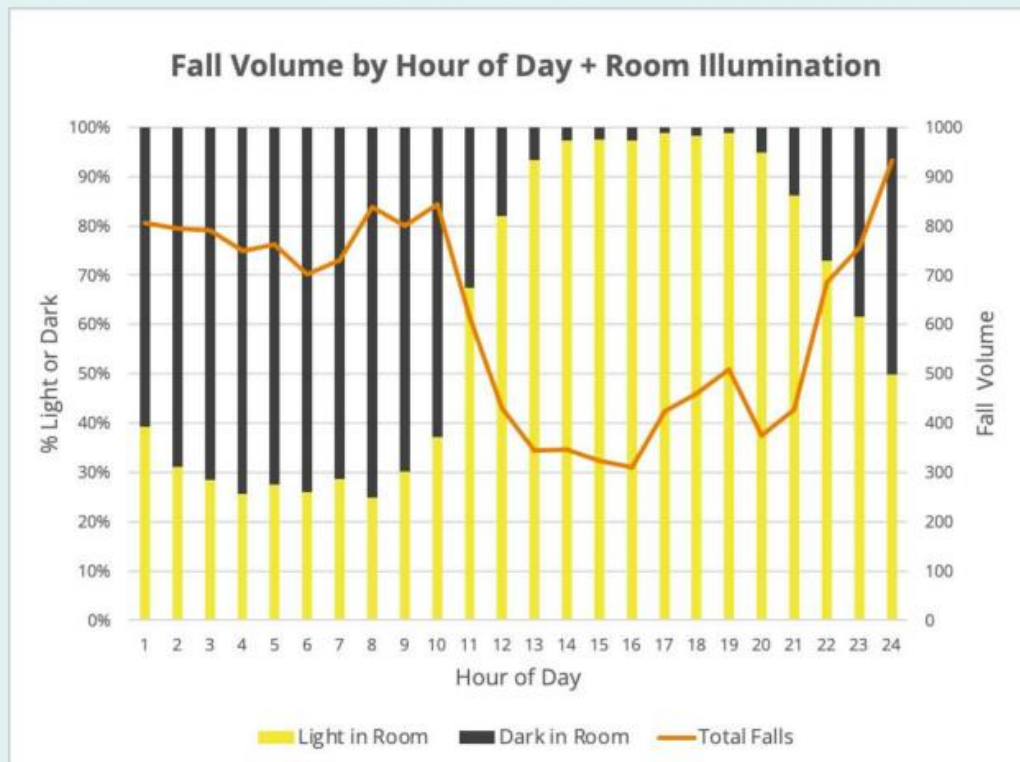
*Nursing Home Abuse Center*



# When do most falls occur?



# Fall Statistics | Lighting



Data Source: SafelyYou from Jan 2020 - Mar 2022 across 14,000+ on the ground detections (fall severity 1, 2, 3, and Intentional w/o self recovery)

## Lighting & Falls

- **73%** of falls occur between 8pm - 9am
- Between 10pm - 7am, **35%** of falls the room was illuminated





# Most Vulnerable Hours?

Fall risk peaks between  
6-9 pm & 3-6 am

Among 3 nursing shifts,  
lowest % of falls occurred  
during 11 pm to 7 am  
night shift (16%)



# Fall Prevention Programs



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# AHRQ's Safety Program for Nursing Homes

## On –Time Falls Prevention Program

- Self-Assessment Worksheet
  - Determine which residents are at high risk for falls
  - Develop interventions to prevent falls
  - Discuss at-risk residents & formulate changes in care plans
  - Carry out investigations, including root cause analysis, when an injurious fall occurs



# AHRQ

- Identify patients at risk
- Consider risk factors of anticipated physiological falls & unanticipated physiological falls
- Screen all patients for injury risk & fall-related injury history



# Fall Validate

– Monitor

- History
- Signs

– Staff  
Elderly

- History
- Examination
- Transfer

– Use  
assessment

## STRATIFY Risk Assessment Tool

Answer all five questions below and count the number of "Yes" answers.

#	Question	Yes / No	
1	Did the patient present to hospital with a fall or has he or she fallen on the ward since admission (recent history of fall)?	Yes = 1	No = 0
2	Is the patient agitated?	Yes = 1	No = 0
3	Is the patient visually impaired to the extent that everyday function is affected?	Yes = 1	No = 0
4	Is the patient in need of especially frequent toileting?	Yes = 1	No = 0
5	Does the patient have a combined transfer and mobility score of 3 or 4? (calculate below)	Yes = 1	No = 0
<i>Transfer score:</i> Choose <b>one</b> of the following options which best describes the patient's level of capability when transferring from a bed to a chair:  0 = Unable 1 = Needs major help 2 = Needs minor help 3 = Independent			
<i>Mobility score:</i> Choose <b>one</b> of the following options which best describes the patient's level of mobility:  0 = Immobile 1 = Independent with the aid of a wheelchair 2 = Uses walking aid or help of one person 3 = Independent			
<i>Combined score (transfer + mobility):</i> _____			
Total score from questions 1-5: _____  0 = Low risk 1 = Moderate risk 2 or above = High risk			

# tools

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# Risk factors for anticipated physiological falls

The following items should be checked and performed for each patient. Upon entering the room, tell the patient you are there to do your rounds.

- Unstable
- Hx of falls
- Frequent falls
  - 1 or more falls in the last 7 days
- Altered mental status
- Certain medications
  - > 4 medications
- ~ 40% of falls occur hourly

#	Item
1	Assess patient pain levels using a pain-assessment scale (if staff other than RNs are doing the rounding and the patient is in pain, contact an RN immediately so the patient does not have to use the call light for pain medication).
2	Put medication as needed on RN's scheduled list of things to do for patients and offer the dose when due.
3	Offer toileting assistance.
4	Check that patient is using correct footwear (e.g., specific shoes/slippers, nonskid socks).*
5	Check that the bed is in locked position.*
6	Place hospital bed in low position when patient is resting; ask if patient needs to be repositioned and is comfortable.*
7	Make sure the call light/call bell button is within the patient's reach and patient can demonstrate use.*
8	Put the telephone within the patient's reach.
9	Put the TV remote control and bed light switch within the patient's reach.
10	Put the bedside table next to the bed or across bed.*
11	Put the tissue box and water within the patient's reach.
12	Put the garbage can next to the bed.
13	Prior to leaving the room, ask, "Is there anything I can do for you before I leave? I have time while I am here in the room."
14	Tell the patient that a member of the nursing staff (use names on white board) will be back in the room in an hour to round again.

linked to

are on

ties on an  
(AHRQ)

# Medications Linked to Falls in Nursing Homes

- Antianxiety- Valium, Ativan, Restoril, Xanax
- Anticonvulsants/Mood stabilizers – Neurontin, Depakote
- Antipsychotics – Risperdal, Seroquel, Zyprexa, Abilify
- Antidepressants- Elavil, Pamelor, Zoloft, Celexa, Lexapro, Paxil, Effexor
- Narcotics- Vicodin, Percodan, Percocet, Dilaudid, Duragesic
- Anticholinergics
  - Vertigo/Motion sickness- Antivert, Scopace, Phenergan
  - Antihistamines with diphenhydramine
    - Benadryl, Vistaril, Nyquil, Sominex, Unisom, Tylenol PM, Motrin PM, Advil PM, Aleve PM)
- RX for overactive bladder- Ditropan & Detrol
- RX to improve urination – Flomax, Hytrin, Cardura, Minipress
- RX sleep aids- Ambien, Sonata, Lunesta, Trazadone
- Antihypertensives- No meta analyses
- RX to lower blood sugar- “most”

*Harvard Health, 2021, Better Health with while Aging*

# CDC- About Medications Linked to Falls

- STOP medications when possible
- SWITCH to safer alternatives
- REDUCE medications to lowest effective dose



# AHRQ

- Take fall precautions
- Provide a safe environment
- Address physiological factors
- Prevent injuries
- Consider using floor/fall mats, beds & protective devices





# AHRQ



Protect “known fallers”  
(patients who are  
admitted because of a  
fall or fall while in care)  
differently than those at  
risk for falling

# AHRQ

- Implement a fall injury risk & injury protection program for patients who are admitted with a fall related injury history
- Make follow up calls to all ER fall patients who are discharged to home

# AHRQ

## Fall prevention must be balanced with other priorities for the patient

- The patient is usually not in the hospital because of falls, so attention is naturally directed elsewhere
- Yet a fall in a sick patient can be disastrous & prolong the recovery process

# AHRQ

**Fall prevention must be balanced with the need to mobilize patients**

It may be tempting to leave patients in bed to prevent falls, but patients need to transfer & ambulate to maintain their strength & to avoid complications of bed rest

# AHRQ

## **Fall prevention is interdisciplinary**

Nurses, physicians, pharmacists, physical therapists, occupational therapists, patients, & families need to cooperate to prevent falls

## **Fall prevention needs to be customized**

Each patient has a different set of fall risk factors, so care must thoughtfully address each patient's unique needs

# AHRQ Universal Fall Precautions

- Familiarize the patient with the environment
- Have the patient demonstrate call light use
- Maintain call light within reach
- Keep the patient's personal possessions within patient safe reach
- Have sturdy handrails in patient bathrooms, room, and hallway
- Place the hospital bed in low position when a patient is resting in bed; raise bed to a comfortable height when the patient is transferring out of bed
- Keep hospital bed brakes locked
- Keep wheelchair wheel locks in "locked" position when stationary
- Keep nonslip, comfortable, well-fitting footwear on the patient
- Use night lights or supplemental lighting
- Keep floor surfaces clean and dry. Clean up all spills promptly
- Keep patient care areas uncluttered
- Follow safe patient handling practices



# CDC STEADI

Stopping Elderly Accidents Deaths & Injuries

3 evidence based recommendations:

- **Screen** older adults annually for fall risk
- **Assess** falls history & physical exam results
- **Intervene** with effective prevention strategies

# STEADI

<https://www.cdc.gov/steadi/pdf/STEADI-Form-RiskFactorsCk-508.pdf>

## CHECKLIST

# Fall Risk Factors

Patient \_\_\_\_\_  
Date \_\_\_\_\_  
Time \_\_\_\_\_ ☐ AM ☐ PM

Fall Risk Factor Identified	Present?	Notes
<b>FALLS HISTORY</b>		
Any falls in past year?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Worries about falling or feels unsteady when standing or walking?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>MEDICAL CONDITIONS</b>		
Problems with heart rate and/or arrhythmia	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Cognitive impairment	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Incontinence	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Depression	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Foot problems	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Other medical problems	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>MEDICATIONS (PRESCRIPTIONS, OTCs, SUPPLEMENTS)</b>		
Psychoactive medications	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Opioids	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Medications that can cause sedation or confusion	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Medications that can cause hypotension	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>GAIT, STRENGTH &amp; BALANCE</b>		
Timed Up and Go (TUG) Test $\geq 12$ seconds	<input type="checkbox"/> Yes <input type="checkbox"/> No	
30-Second Chair Stand Test: Below average score based on age and gender	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4-Stage Balance Test: Full tandem stance $< 10$ seconds	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>VISION</b>		
Acuity $< 20/40$ OR no eye exam in $> 1$ year	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>POSTURAL HYPOTENSION</b>		
A decrease in systolic BP $\geq 20$ mm Hg, or a diastolic BP of $\geq 10$ mm Hg, or lightheadedness, or dizziness from lying to standing	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<b>OTHER RISK FACTORS (SPECIFY BELOW)</b>		
	<input type="checkbox"/> Yes <input type="checkbox"/> No	



Centers for Disease  
Control and Prevention  
National Center for Injury  
Prevention and Control

**STEADI** Stopping Elderly Accidents,  
Deaths & Injuries

2017

**drive**

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## SCREENED NOT AT RISK

**PREVENT** future risk by recommending effective prevention strategies.

- Educate patient on fall prevention
- Assess vitamin D intake
  - If deficient, recommend daily vitamin D supplement
- Refer to community exercise or fall prevention program
- Reassess yearly, or any time patient presents with an acute fall

## 3 **INTERVENE** to reduce identified risk factors using effective strategies.

### Reduce identified fall risk

- Discuss patient and provider health goals
- Develop an individualized patient care plan (see below)

Below are common interventions used to reduce fall risk:

#### Poor gait, strength, & balance observed

- Refer for physical therapy
- Refer to evidence-based exercise or fall prevention program (e.g., Tai Chi)

#### Medication(s) likely to increase fall risk

- Optimize medications by stopping, switching, or reducing dosage of medications that increase fall risk

#### Home hazards likely

- Refer to occupational therapist to evaluate home safety

#### Orthostatic hypotension observed

- Stop, switch, or reduce the dose of medications that increase fall risk
- Educate about importance of exercises (e.g., foot pumps)
- Establish appropriate blood pressure goal
- Encourage adequate hydration
- Consider compression stockings

#### Visual impairment observed

- Refer to ophthalmologist/optometrist
- Stop, switch, or reduce the dose of medication affecting vision (e.g., anticholinergics)
- Consider benefits of cataract surgery
- Provide education on depth perception and single vs. multifocal lenses

#### Feet/footwear issues identified

- Provide education on shoe fit, traction, insoles, and heel height
- Refer to podiatrist

#### Vitamin D deficiency observed or likely

- Recommend daily vitamin D supplement

#### Comorbidities documented

- Optimize treatment of conditions identified
- Be mindful of medications that increase fall risk

# CDC

## Trainer Training



[STEADI Our Staff for Fall Prevention](#)  
[PPT – 4 MB]

## Provider Training



[Empowering Healthcare Providers to Reduce Fall Risk](#)

## STEADI-R<sub>x</sub>



[STEADI-R<sub>x</sub>: Guide for Community Pharmacists](#)

# **World Guidelines for Falls Prevention & Management for Older Adults (2019)**

Risk factors for falls are largely preventable and modifiable

- What they are?
- How do we measure them?
- What do we do about them?

# Grade Scaling

Measuring system about strength of evidence & potential bias

4 Ps

- **P**redictive
- **P**reventative
- **P**ersonalized
- **P**articipatory



# Predictive

Annual fall questionnaire (physician led)

- Have you fallen in past year?

- Do you feel unsteady?

- Do you worry about falling?

• **Three key questions** for patients [at risk if **YES** to any question]

- Feels unsteady when standing or walking?

- Worries about falling?

- Has fallen in past year?

“**Yes**” to any of these 3 questions leads to further screening

# Fall Prediction Tools

- Don't use them
- Instead ALL patients  $\geq 65$  yo should be considered at high fall risk



# Predictive

## Screening

- Mechanisms of how older adults fall
- Setting of fall (community dwelling, SNF, LTC, Acute Care, etc.)
- Be overwhelmingly curious about where fall occurred & foster sensitivity to patient's perceptions
  - Self report bias or inability to recall can create gap in our understanding of how & why fall occurred
  - Use literature to understand balance & functional mobility

# Predictive

## Grade 1A:

Clinicians should routinely ask about falls in their interactions with older adults, as they often will not be spontaneously reported

## Expert Recommendation:

Older adults in contact with healthcare for any reason should be asked at least 1x year if they've experienced 1 or more falls in past year & about frequency, context, severity & consequence of any fall

# Predictive

## Grade 1A:

Residents are asked to rise from a standard armchair, walk to a marker 10 feet away, turn, walk back & sit down again (Gait Speed or Timed Up & Go test)

$\geq 15$  seconds (fall risk)



# Gait, Strength & Balanced

## Timed Up (TUG)

**Purpose:** To assess mobility

**Equipment:** A stopwatch

**Directions:** Patients wear their reg can use a walking aid, if needed. B patient sit back in a standard arm c line 3 meters, or 10 feet away, on t

### ① Instruct the patient:

When I say "Go," I want you to:

1. Stand up from the chair.
2. Walk to the line on the floor at your no
3. Turn.
4. Walk back to the chair at your normal
5. Sit down again.

### ② On the word "Go," begin timing

### ③ Stop timing after patient sits b

### ④ Record time.

Time in Seconds:

An older adult who takes ≥12 seconds to complete the TUG is at risk for falling.

## ASSESSMENT

## 30-Second Chair Stand

**Purpose:** To test leg strength and er

**Equipment:** A chair with a straight t arm rests (seat 17" high), and a stop

### ① Instruct the patient:

1. Sit in the middle of the chair.
2. Place your hands on the opposite shoulder cross
3. Keep your feet flat on the floor.
4. Keep your back straight, and keep your arms a
5. On "Go," rise to a full standing position, then sit b
6. Repeat this for 30 seconds.

### ② On the word "Go," begin timing.

If the patient must use his/her arms to stand. Record "0" for the number and score.

### ③ Count the number of times the patier to a full standing position in 30 secon

If the patient is over halfway to a standing pi 30 seconds have elapsed, count it as a stand

### ④ Record the number of times the patie in 30 seconds.





Number:

Score:

## The 4-Stage Balance Test

### Instructions to the patient:

- I'm going to show you four positions.
- Try to stand in each position for 10 seconds.
- You can hold your arms out, or move your body to help keep your balance, but don't move your feet.
- For each position I will say, "Ready, begin." Then, I will start timing. After 10 seconds, I will say, "Stop."

	① Stand with your feet side-by-side.	Time: _____seconds
	② Place the instep of one foot so it is touching the big toe of the other foot.	Time: _____seconds
	③ Tandem stand: Place one foot in front of the other, heel touching toe.	Time: _____seconds
	④ Stand on one foot.	Time: _____seconds

### Notes:

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Patient: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_ ☐ AM ☐ PM

# Preventative

Focused on intention to prevent falls & related injuries while optimizing functional ability



# Fall Risk Factors

- Balance
- Gait
- Muscle strength
- Appropriate prescription of walking aids
- Footwear & foot problems
- Fear of falling
- Dizziness & vestibular function
- Vision
- Hearing
- Functional capacity & ADLs
- Cognition
- Delirium
- Behavior
- Orthostatic hypotension
- Urinary incontinence
- Cardiovascular disorders & symptoms of cardiovascular disease
- Other contributing diseases in atypical presentations
- Neurodegenerative conditions with motor components e.g., Parkinson's disease
- Mental health & mood disorders, in particular depression
- Medication polypharmacy & inappropriate medication prescription
- Nutrition
- Vitamin D
- Environmental hazards



# Reducing extrinsic risk

- Eliminate slipping and tripping hazards
- Keep bed at proper height during transfer and when patient rises to standing position
- Don't keep bed in lowest position at all times
- Check chairs, toilets & safety grab bars for potential safety problems
- Use proper room lighting
- Make sure patient wears proper footwear (not just non-skid socks)

# Personalized

- Older adult populations is heterogenous
- One size does not fit all-population-based risk assessment
  - **A**ge ( $\geq 85$  yo)
  - **B**ones (risk or fracture hx)
  - Anti-**C**oagulation
  - Post **S**urgical
- Collaborate with our clients
- Individualized post-fall care



# Personalized

Use

Use teach-back & other interactive methods to enhance patient education

Familiarize

Familiarize nurses & other staff with common patient perceptions regarding falls

Utilize

Utilize patient-engaged technology to further build patient participation & safety



# Personalized

- Hand strength can be indication of overall strength
- Osteoarthritis – pain, muscle weakness or not lifting leg high enough?
- Fear of falling- many tests; don't ignore; work on confidence

# Reducing anticipated physiological fall risk

Use interventions tailored to patient's identified risk factors

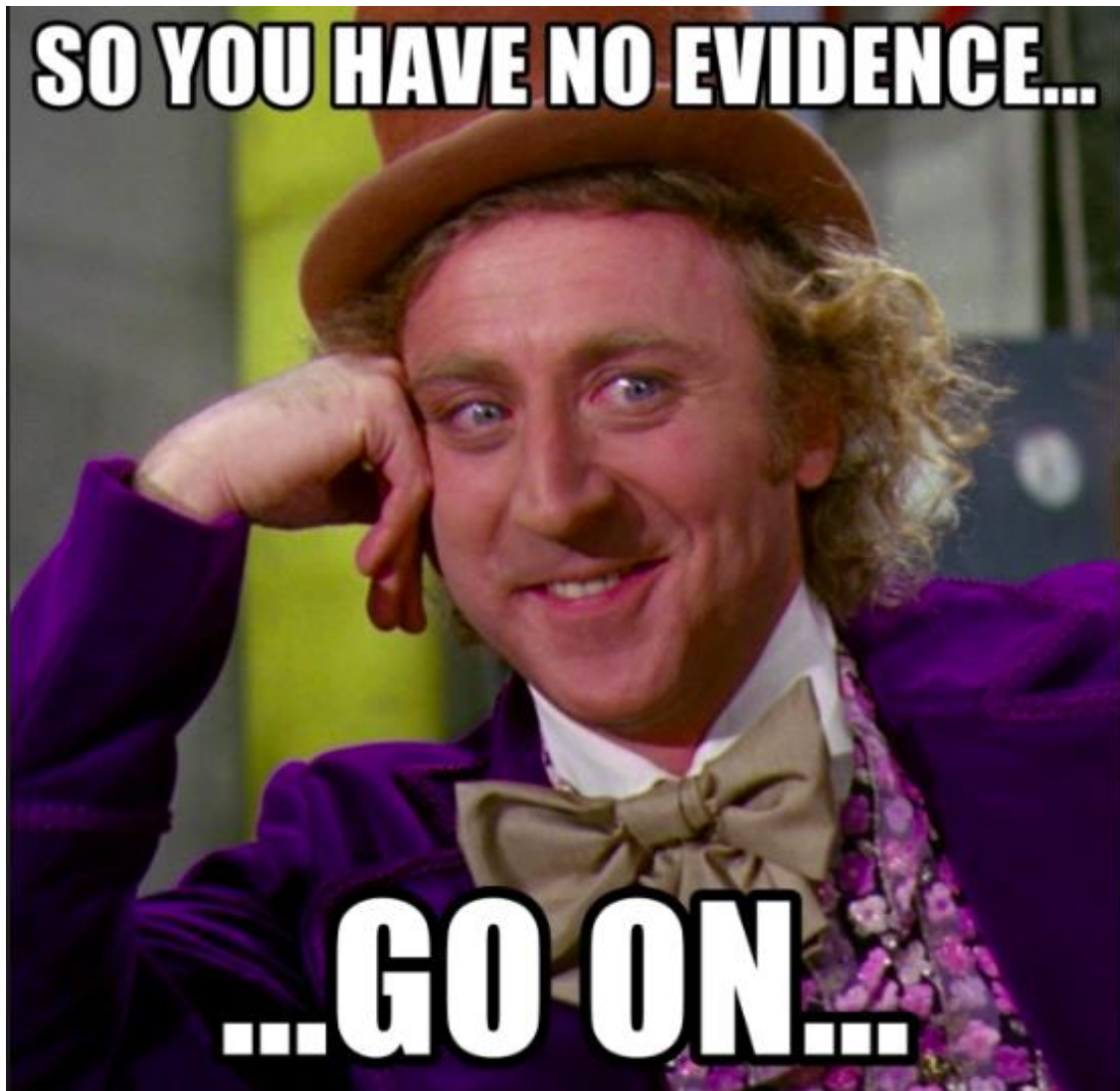
- Elimination problems: Implement anticipated toileting
- Sleep deficits: suggest alternatives to sleep medication (listening to audio books, soft music, backrub)
- Impaired gait or balance: Keep mobility aids within reach & regularly reinstruct

# Participatory

## Resident Education

- Effective for cognitively intact residents





# To help prevent falls

*Which 1 is NOT TRUE*

- Always locked to lowest position when done with care?
- Keep bed wheels locked except when giving bedside care?
- Always have co-worker present when giving care?

# DME & Falls?



Alarm Accessories



Alarms and Sensors



Injury Prevention/Risk  
Identification



Patient Room Safety



# “Medicare stops at the bathroom door”

## Bathroom Safety Devices:

The AGS/BGS Guideline 2010 includes a strong recommendation for adaptation or modification of the home environment to reduce falls. Many of the studies that underpin this recommendation included modifications in the bathroom to reduce falls, such as installation of grab bars or use of a seat during bathing. These items are used to compensate for impairments such as weakness, poor balance, and limited activity tolerance that could otherwise lead to a fall. From this perspective, these items clearly meet the medical necessity requirement. In terms of reasonableness, however, the cost/benefit analysis implied in the *Benefit Policy Manual* is particularly relevant. Bath seats, grab bars and raised toilet seats typically cost less

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than \$100, while transfer benches cost less than \$150. A 1998 study found that the average healthcare cost (hospital, emergency room, home health care, and emergency care) for a fall related injury sustained by an adult 72 years old and older was approximately \$20,000, not including physician charges (Rizzo, Friedkin, Williams, Nabors, Acampora & Tinetti, 1998). Given the minimal cost of the equipment in comparison to the significant cost of care from falls or other resulting problems, application of the first test of reasonableness could support coverage of these items.

The second and third tests point out the lack of other alternatives. Older adults whose impairments affect their ability to perform bathing and toileting have *no* “feasible alternatives.” They may persist with efforts to bathe or toilet despite the risk, or their hygiene and skin integrity may decline as they curtail these activities in an effort to reduce falls risk.



# Bathroom Safety

## Safe Toileting

- Highest rates for fall injuries occur in or around tubs & showers & on or near toilet
- Avoid reliance on grab bars, which are ineffective & can even cause injury
- Honor patient independence & privacy in the toileting plan of care

# Safe Toileting



Falls in bathrooms:  
Navigating physical  
environment

Include in fall prevention  
training:

- Transferring on/off the toilet
- Physical act of elimination & personal hygiene

# Bathroom Safety

## Towel rack & grab bar placement

- Make it intuitive, especially for residents with cognitive impairment, who won't remember where the grab bar is placed

## Showers

- Roll in showers with no threshold
- Older buildings that do have a step, having them transfer with a tub transfer bench can help to avoid falls
- Built-in fold-up bench or open space where the appropriate chair can be placed according to individual needs



# Bathroom Safety

- Automatic faucets & toilet flushing:  
Help seniors with limited hand mobility & those with cognitive impairment (if not automatic, have easy to use single lever)
- Placing hand washing at arms' length helps seniors with balance issues avoid reaching

# Early Mobility

- Helps patients gain strength
- Limiting patient mobility increases the likelihood & severity of falls (80% of care is received in bed)
- Assess for:
  - Postural hypotension
  - Lower extremity sensory neuropathy
  - Ability to follow complex demands





# Physical Activity

- 150-300 minutes per week of intermediate or
- 75- 150 minutes per week of vigorous intensity (Grade E)
- Progressive resistance strength training, e.g., Tai Chi (Grade 1B)

World Guidelines



# Balanced & Strength Exercises

## Exercise

### BALANCE

For more specific instructions on advancing each exercise, refer back to the manual.

#### Sit



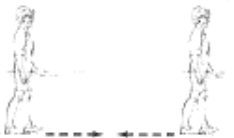
#### Side



#### Heel-toe (1)



#### Heel-toe (2)



STEPPING ON • STRENGTH /

## Strength

### Strength Exercises

For more specific instructions on advancing each exercise, refer back to the manual.

#### Side-hip-strengthening



#### Front-knee-strengthening



#### Heel raises



#### Toe raises



STEPPING ON • STRENGTH AND BALANCE EXERCISE MANUAL

## The Goals of Exercise Sessions:

- To motivate participants to exercise
- To explain - why and how of exercising
- To practice with participants
- To challenge - everyone is different
- To encourage changing habits - the start of regular lifelong exercise habits



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# No Evidence

- Don't provide intervention activities that are non-purposeful – no cones, pegs, shoulder arc, arm bike



Occupational performance. (n.d.) *Miller-Keane Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health, Seventh Edition*. (2003). Retrieved August 8 2019 from <https://medical-dictionary.thefreedictionary.com/occupational+performance>





# Wheelchair Accidents

**2 Million Wheelchair users**

**>100,000 wheelchair injuries reported annually**

- Trips and falls = 65%-80% of total
- Nursing Home residents average > 2 mwc falls per year



# Wheelchair Measurements



# Standard Adult Wheelchair

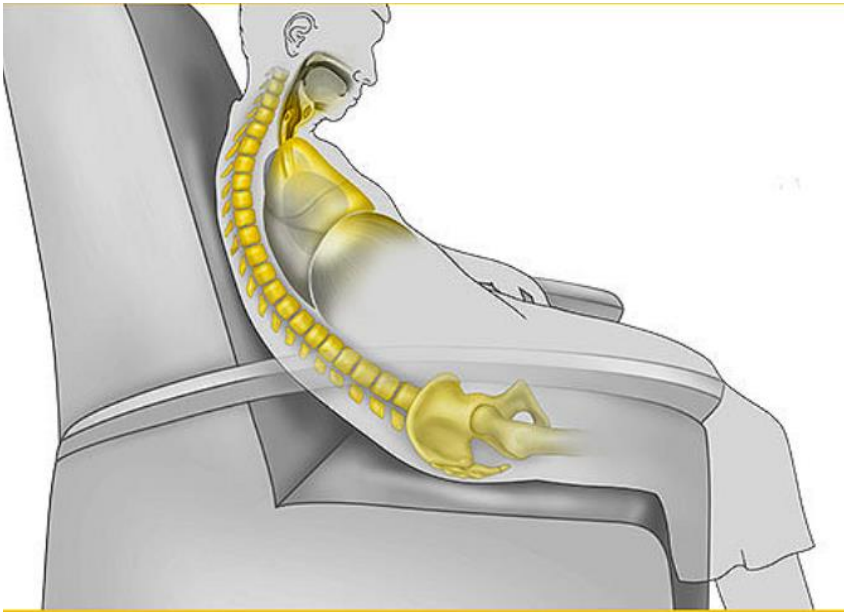


- 18" W x 16" D; 19" Seat to Floor;
- Weighs > 36 lbs.
- 250 lb. or less weight capacity



# Arm Rests

- Arm rest bolsters or



out of the wheelchair,  
therefore reducing  
dependence on belted or  
cushioned restraints



# Correct Fit

- Thighs level
- Feet flat on floor or on foot plates
- Back of chair comes up to mid shoulder bones
- Elbows rest on armrests without leaning and without tucking inside or between armrests



# Physical Restraints

- Increase fall risk
- Can cause agitation, delirium, pressure injuries, deconditioning, strangulation, death



# The Law

## Respect and Dignity [42 C.F.R. 483.10(e), 483.12] [F-604]

***The resident has a right to be treated with respect and dignity, including:***

*The right to be free from any physical or chemical restraints imposed for purposes of discipline or convenience, and not required to treat the resident's medical symptoms . . .*

*The resident has the right to be free from abuse, neglect, misappropriation of resident property, and exploitation . . . This includes but is not limited to freedom from corporal punishment, involuntary seclusion and any physical or chemical restraint not required to treat the resident's medical symptoms.*

***The facility must—***

*Ensure that the resident is free from physical or chemical restraints imposed for purposes of discipline or convenience and that are not required to treat the resident's medical symptoms. When the use of restraints is indicated, the facility must use the least restrictive alternative for the least amount of time and document ongoing re- evaluation of the need for restraints.*



# What is a Physical Restraint?

**According to CMS's Interpretative Guidance, a physical restraint is** *any manual method, physical or mechanical device, equipment, or material that meets all of the following criteria:*

- *Is attached or adjacent to the resident's body;*
- *Cannot be removed easily by the resident; and*
- *Restricts the resident's freedom of movement or normal access to his/her body.*

**The Interpretative Guidance states that removing a physical restraint easily means** *the manual method, physical or mechanical device, equipment, or material, can be removed intentionally by the resident in the same manner as it was applied by the staff.*

# Safety or Restraint?

Seat belts?

Tilt in Space?

Raised  
rails/defined  
perimeter/scoop  
mattresses?



# Seat Belts

- Wheelchair belts are used to provide additional support and safety and can also be considered a type of restraint.
- Wheelchair belts should be used appropriately depending on your needs, preferred seating position, and preferences.
- A wheelchair belt must fit properly in order to work effectively without restricting movement or causing discomfort.

# Tilt in Space

According to the manufacturer, the device is not that of restraint, but a device for repositioning the body for the following reasons:

- Used properly
- Physician's order
- Used in accordance with the patient care plan

(2009).

# Defined Perimeters

When a resident is at risk of falling from bed, use of a scoop mattress should be incorporated in the fall prevention care plan (no evidence)



*Using a Fall Prevention Mattress to Reduce Falls From Bed*  
Written by: [Scott Grant, CSA®, SHSS®, ATP](#)

# Bed Rails & Assist Bars

No evidence comparing use of bedrails in preventing falls among hospitalized older adults to no use of bedrails or any type of physical restraints

*Effectiveness of bedrails in preventing falls among hospitalized older adults: a systematic review JBI Database System Rev Implement Rep.*



# Vitamin D Supplements

Increases bone health & muscle function

- NCBI- 800-1,000 IU Vitamin D3 with Calcium/day
- NIH- less falling with serum 25 (OH)D levels  $\geq 50.0$  nmol/l in women 60+ yo
- World Guidelines- Reserved for those at risk for Vitamin D deficiency (Grade E)

# AOTA

Table 2: Recommendations from AGS/BGS Guideline 2010 for older adults residing in long term care

Recommendation	Grade of Recommendation	Comments/Cautions from Guideline
Multifactorial/multicomponent interventions should be considered in long-term care to reduce falls.	C: No recommendation for or against the routine provision of the intervention is made.	none
Exercise programs should be considered	C: No recommendation for	caution regarding risk

HEALTH NEWS APRIL 17, 2018 / 3:28 PM / 6 MONTHS AGO

## Older adults may not need vitamin D to prevent falls and fractures

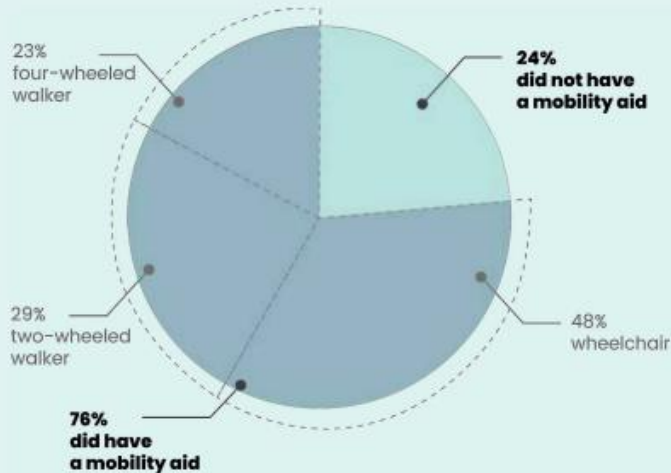
per day should be considered in older persons residing in long-term care settings who have abnormal gait or balance or who are otherwise at increased risk for falls.	clinicians provide this intervention to eligible patients.	
There is insufficient evidence to recommend for or against multifactorial or single interventions to prevent falls in older persons with known dementia living in the community or in long-term care facilities.	I: Evidence is insufficient to recommend for or against routinely providing the intervention	none



# Home Modifications

Fewer falls on vinyl than on carpet  
Very low beds do not reduce fall risk

## Mobility Aid Closest to Resident



## Room Clutter



**34% of rooms are cluttered**

82% have a mobility aid

Data Source: SafelyYou from Jan 2020 - Mar 2022 across 14,000+ on the ground detections (fall severity 1, 2, 3, and Intentional w/o self recovery)

# Home Modifications

## Lighting & Colors

- Choosing colors & lighting ideal for seniors can create a safer environment
- Using contrasting colors for floors, walls & furniture can reduce falls by allowing residents to detect changes in their environment

Green – Earthy & forestry greens are known to promote healing, relaxation & serenity

Blue – Shades of water & beachy blues help make people feel more at peace; calming color & tends to reduce stress

# Lights

Swapping fluorescent bulbs with LED color-changing lights inside long-term care facilities could reduce resident falls 43%

*Midwest Lightning Institute in Brigham & Women's Hospital*

Upgraded lighting with higher intensity during day & lower intensity at night can reduce falls by 43%

*Journal of the American Medical Directors Association, <https://pubmed.ncbi.nlm.nih.gov/35850166/>.*



# Home Modifications

## Doorways and floor ways (not Evidence Based)

- Use textured flooring to create some friction
- Tile (carpeting is much more challenging to walk on)
  - Never use polished floor tile (to reduce glare & minimize slippery surfaces)
  - Make sure there are no big gaps in grout lines
  - Luxury vinyl tile has a softer impact, is durable & is easy to clean
- Zero threshold (level transition) at entry doorways & flush thresholds between two surfaces
  - When residents have walkers or wheelchairs, they're not able to navigate over even minimally uneven thresholds
  - Their gait is not as good, so it's easy to catch a toe on a threshold

# Sitters

Cost-intensive - often unsuccessful\*

*\*In a 75 hospital study, most patient falls that occurred during sitter-supervised time were unassisted*

Transitioning sitters to mobility assistants helps organizations make more efficient use of their resources while improving safety



# Intentional Rounding

- Weak evidence
- Perception of top down approach restricting staff autonomy
- Increase workload; lack of staff
- Conflicting priorities





# Assistive Devices and Falls

- Canes, walkers, wheelchairs (wc)
- Right size, being used properly, damaged device, teach with return demonstration
- In LTC, high fall incidence occurs when patient moves from wheelchair to bed or gets up from unbraked wheelchair



# Personal Alarms

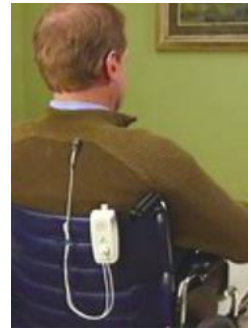
Rarely helpful and insufficient

Dependent on timeliness of staff's response

- Call light response, > 13 minutes





Harm: Alarm fatigue, contribute to confusion and agitation among cognitively impaired, restrict mobility and independence



Improve effectiveness by:

- Revising usage based on clinical criteria, e.g., confusion, impulsivity & mobility status, rather than a fall risk assessment score
- Wearable alarm systems more effective than wc & bed exit alarms

# Which 2 of these measures will NOT help prevent falls?

- Non-skid footwear? 
- Signal lights always within reach?
- Bed wheels locked for transfer?
- Clothes loose and floor length? 

# Non-Slip Gripper Socks

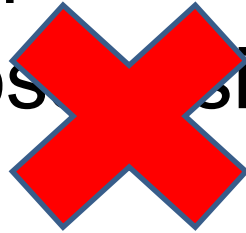
- No evidence for efficacy (can do harm)
- Patient owned footwear is best



# Gait Belts

Which statement is incorrect?

- Used to support unsteady residents?
- Help prevent falls & other injuries?
- Always applied over clothing?
- Goes across resident's chest?





# Gait Belts

No randomized clinical trials have been conducted proving gait belts reduce falls or injury

- Use gait belts to safely steady patients (no to lift patients)
- Boost patients from their bottom to help them complete a transfer & ambulate safely with proper assistance (1- or 2-person) or to use MAE
- Never use more than two people to assist a patient. More than two helpers can increase risk of patient & staff injury.
- If the patient requires two helpers, each providing more than minimal assistance, consider a partial standing lift or a total sling suspension lift





# Pivot or Transfer Discs

No randomized clinical trials have been conducted proving pivot discs reduce falls or injury

- Designed for assisted or unassisted transfers by individuals with limited or no ability to pivot
- Individuals with upper body strength can use a pivot disc to accomplish independent transfers or with caregiver assistance
- Useful for transfers between bed, wheelchair or toilet & can reduce caregiver back strain



# Fall or Floor Mats

**Study:** Hazards of using floor mats as a fall protection device at the bedside, (J Pat. Safety, June 2010)

**Conclusions:** The bevel-edged, bedside floor mat is a potential hazard for ambulatory patients, especially those with impaired gaits, using walkers & pushing mobile intravenous stands

**Study/Conclusions:** Risk of severe head injury is reduced to 1% when falling from a low bed position onto a fall mat

(Compared to a~40% of injury risk occurring at normal bed height over bed rail onto unprotected flooring (Bowers et al., 2008))

# VA Floor Mat Resource & Implementation Guide

Bedside floor mats are a common component of a fall-injury prevention programs in many VA facilities, although their efficacy has never been tested

- Make sure use floor mats with beveled edges to reduce tripping risk
- Inspect floor mat for curled edges & if present, replace
- Check with the manufacturer for cleansing instructions & establish a routine cleaning schedule & process
- Many staff store mats underneath the bed when the patient is not in the bed. Mats that are constructed with fold lines may be easier to store than ones that cannot be folded
- Thickness & edge characteristics are important to consider when selecting a floor mat, due to the tripping hazard introduced when a mat is placed next to a beds
- Thicker mats will produce a higher risk for tripping
- Beveled edges reduce tripping risks
- Glow-in-the-dark strips around the mat's edges increase visibility of the bedside floor mat at night & may decrease trip hazard

# VA Floor Mat Appropriate Use

Floor mats are used for patients who you worry will get out of bed without calling for help & are at risk for injury

- The floor mat is to be placed at the side of the patient the patient exits the bed from & only on the floor when the patient is resting in bed
- Stow the floor mat safely when patient is standing & ambulating
- Should the nurse choose to leave the floor mat at the exit side of the patient's bed when approaching the patient in the bed, the nurse should exercise caution with stepping to decrease trip risk
- The size of the floor mat is an important consideration for use
- It is most prudent to use a mat that extends beyond the head of the bed & one that is at least 44 inches wide
- Furniture near the head of the bed should be placed with care & sharp edges should be padded for persons likely to fall from bed

# Population Specific Approaches

Hx of hip fracture: provide protective equipment (floor/fall mats, hip protectors); use video surveillance and chair alarms



# Beds

Historically, low beds used as fall reduction measure (passive restraint & fall shorter distance)

Table 1: Median outcome rates comparing conventional and low-low beds<sup>3</sup>

<i>Per 1,000 occupied bed days</i>	<i>Units with low-low beds</i>	<i>Units without low-low beds</i>
Falls in the bedroom	2.2	1.7
Falls with injury	1.7	1.2



# Beds

## Optimal bed height

**Table 2: Lower leg length and optimal bed height<sup>7,8</sup>**

**Range of optimal bed heights for sit-to-stand transition**

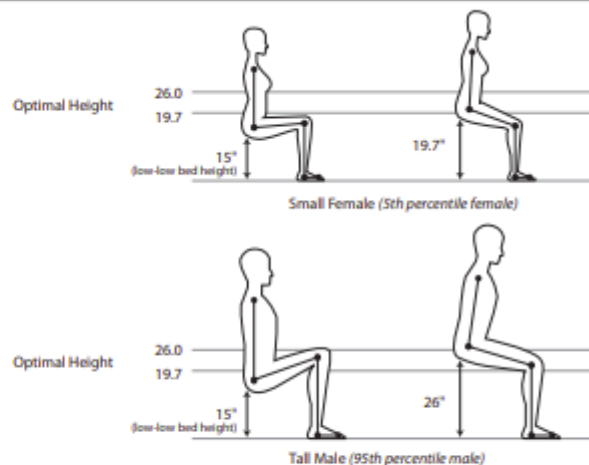
Low of 19.7" to accommodate most women

High of 26.0" to accommodate most men

**Lower leg length norms for women and men**

	5 <sup>th</sup> percentile female	95 <sup>th</sup> percentile male
Lower leg length* (100%)	16.4"	21.7"
Optimal bed height (120%)	19.7"	26.0"

*\*from floor to mid-patella*



*A bed height of about 120% of lower leg length facilitates standing which may reduce the frequency of falls in the inpatient setting.<sup>6</sup> Bed heights significantly lower than 120% make it more difficult for the patient by requiring a greater range of motion to stand.*

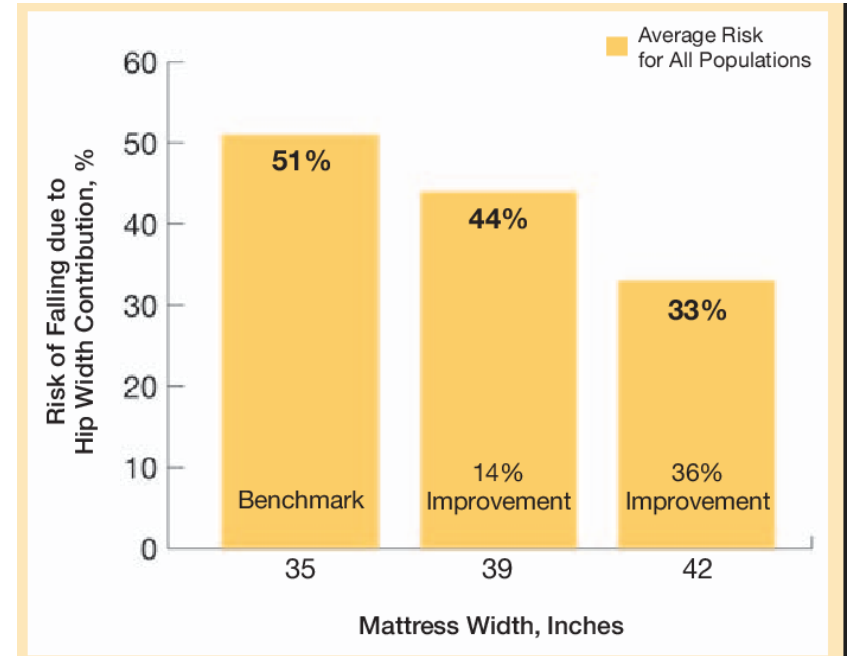
**Hill-Rom**

**drive**

**DeVilbiss**  
HEALTHCARE

# Beds

- Wider beds
- Travel range
- Underbed light
- Assist rails
- “Good surface”

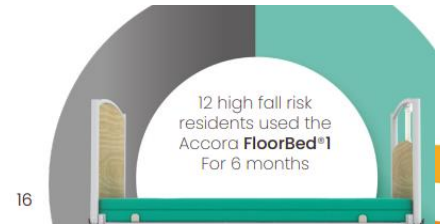


Results to the study were as follows:

80%  
Reduction  
in falls

100%  
Reduction  
in bed falls

100%  
Reduction in  
notable injuries



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# DME and Falls

## Wide beds: Added inches, added safety

**Toilet DME (Durable Medical Equipment)  
Used to Prevent Falls and Injuries**

August 4, 2015 by Guy Fragala, PhD, PE, CSP, CSPHP

[f](#) [in](#) [tw](#) [G](#) [+](#) [Reprints](#)



## Will Medicare Pay for a Lift Chair?

## New beds improve fall rates

Issue	Comments
Multiple bed manufacturers and sensitivity variations of bed alarms; lack of standardization	If staff is not familiar with a particular type of bed, they're less likely to use the equipment properly, if at all. We educated staff so they would develop an awareness of variations and use bed alarms correctly.
Insufficient ratio of bed alarms to chair alarms	A patient who needs an alarm when in bed also needs one when sitting in a chair. So we added a chair alarm* in each room to ensure our fall prevention efforts were consistent.
Lack of available or accessible equipment	If equipment is not available or accessible, staff won't use it. We streamlined the process for obtaining equipment. For example, disposable pads used with the chair alarms were stocked in each department.
Variations with the nurse call system bed/chair alarm alerts	The multidisciplinary team collaborated to standardize visual and auditory alerts that resulted in improved alarm response times.



**drive**

**DeVilbiss**  
HEALTHCARE

# Beds

## Cardiac Chair Position:

Can help residents maintain normo-tension &/or normo-fusion to organs & prevent orthostatic hypotension & feelings of weakness, nausea, headache, neck ache, dizziness/vertigo, blurred vision, even impaired cognition



# Artificial Intelligence

Machine learning:

- Used to identify fall risk factors
- Build predictive models

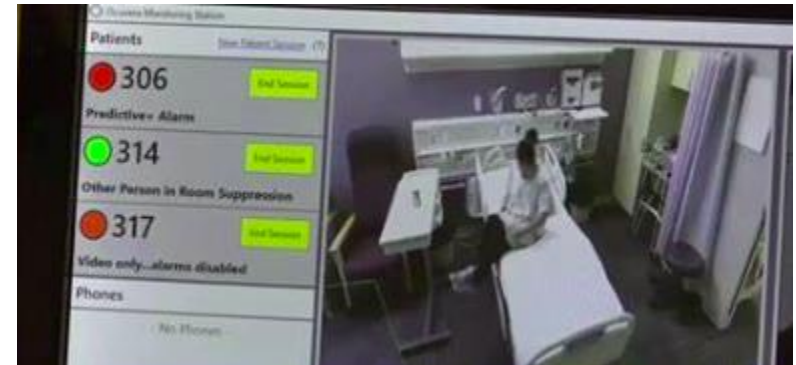




# Fall Prevention Technology

- 94% of falls are unwitnessed\*
- Consented video technology helps care staff monitor residents & witness falls occurring
- Allowing better cause analysis and putting measures in place to avoid the same type of fall from occurring again

\* SafelyYou, falls prevention technology company





# Fall Prevention Technology

- In California, El Camino Hospital used predictive analytics to reduce hospital fall rates by **39% in 6 mos.**
- At Tiger Place, a retirement residence in Missouri, Microsoft Kinect sensors have been placed around the facility to log residents' baseline gait speed and stride length. The sensors alert staff if those variables decrease; such shifts are linked to a substantially higher risk of falling
- A pilot program in the U.K. gave elderly residents **wearable devices to detect early** — but not always visible — **indications of frailty**, such as low grip strength, hydration levels and muscle mass. The devices, which use Microsoft machine learning tools, were able to raise warning flags about one month in advance of an incident, a Microsoft blog post reported

# Radar Helps Predict Falls

Chalmers University of Technology, Sweden:  
Developed method for predicting fall accidents & cognitive illnesses, e.g., Alzheimer's disease by reading a person's walking pattern with the aid of a radar sensor

The small, off the shelf sensor can be attached to furniture, walls & ceilings

(home & health care setting)

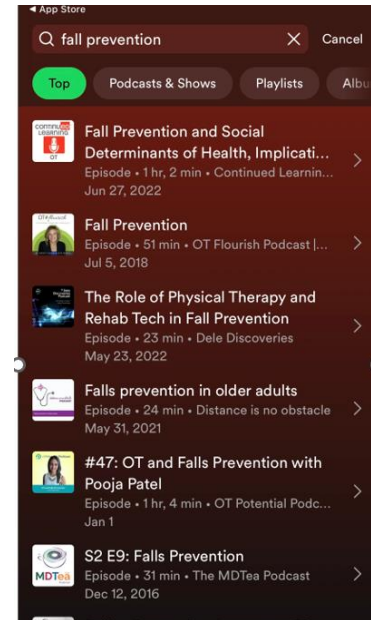
# Recommended Resources

- OT Flourish Podcast- Geriatric Occupational Therapy
- Fall Prevention
- Sit to stand transfers in subacute- ~12
- Sit to stand transfers in home 60- 70 per day
- Call 211- fall prevention
- Matter of balance

• [https://dailycaring.com/reduce-falls-with-2-useful-balance-exercises-for-seniors-to-do-at-home/?utm\\_source=DailyCaring&utm\\_campaign=069f9bcdf5-DC\\_Email\\_2023-01-31&utm\\_medium=email&utm\\_term=0\\_57c250b62e-069f9bcdf5-123641042](https://dailycaring.com/reduce-falls-with-2-useful-balance-exercises-for-seniors-to-do-at-home/?utm_source=DailyCaring&utm_campaign=069f9bcdf5-DC_Email_2023-01-31&utm_medium=email&utm_term=0_57c250b62e-069f9bcdf5-123641042)

- **Balance exercises for seniors preserve independence**
- **Take safety precautions to prevent injuries while exercising**

- Many falls happen when someone gets distracted and is momentarily not fully concentrating on walking. To improve balance for these situations, do the same T exercise, but look in different directions while doing it.
- Change up the footwear – shoes vs [anti-slip grip socks](#)
- Use a cane
- Get help with balance or walking as needed (for example, using a [gait belt](#))
- [foam exercise balance pad](#) or flat cushion



# Recap

- Focus on improvement over time
- Invest time and resources
- Consider unique needs of various patients
- Include multi-disciplines in developing fall prevention strategies
- Consider assistive DME



# Thank you

Questions?

Ideas for future  
discussions?

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