PharMerica®

FALL RISK TOOLKIT

Introduction

A fall is defined as an unintentional descent to collide and come to rest on a lower object or the floor. While falls may occur without injury, older adults face greater risks of injurious or even fatal outcomes.

According to the CDC, more than one in four older adults fall annually. These incidents are the leading cause of fatal injuries and non-fatal trauma-related hospital admissions among older adults.

The effects of a fall, even one that does not cause serious injuries, can have a significant impact on a senior's life, limiting their activities, independence and social engagements. All of these outcomes can lead to a decline in residents' health and well-being.

While there are various underlying causes of falls among older adults, many of them can be treated or corrected (modifiable risk factors). Long-term care communities can champion fall prevention and management by implementing standard precautions, supporting risk stratification for residents' relative risk for falling, and driving resident-specific interventions to mitigate these risks.

This Fall Risk Toolkit Outlines:

- Risk factors that contribute to falls
- How to engage your pharmacy team to evaluate residents' medication-related fall risk and to make impactful risk-mitigation recommendations through SAFE medication regimen reviews
- Leveraging nursing staff to collaborate on fall risk evaluation with validated assessment tools
- Preventative steps to minimize fall risk after resident discharge

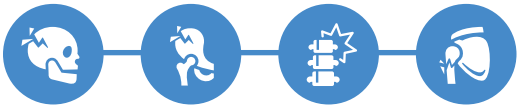
Fall Facts

- One in four Americans over the age of 65 falls each year.
- Thirty million older adults fall each year.
- Each year, three million older adults are treated for a fall injury.

- Every 11 seconds, an older adult is treated in the emergency room for a fall.
- Every 19 minutes, an older adult dies from a fall.

- Falls are the leading cause of both fatal and non-fatal injuries for older adults.
- Adults older than 60 years of age suffer the greatest number of fatal falls.

- Each year, nearly 319,000 older people are hospitalized for hip fractures.
- In adults aged 65+, falls are the leading cause of head injuries and broken hips.
- Falls are the number one cause of fractures.



Unfavorable Outcomes

The majority of falls result in minor injuries. But due to pre-existing health issues, lower bone and muscle strength, and other factors, the elderly tend to have worse outcomes from falls than the general population. Some of the unfavorable outcomes seniors experience from falling include:

- Traumatic brain injury
- Fractures, particularly of the hip, forearm, humerus and pelvis
- Joint dislocation
- Hematoma
- Laceration
- Fear of falling, resulting in inactivity and reduced independence
- Caregiver stress
- Diminished function
- Death

DID YOU KNOW?

- Falls are the most common cause of traumatic brain injuries for people in every stage of life.
- About 30%–50% of these falls result in minor injuries, but about 10% sustain major injuries. About 1% of all falls in the elderly result in hip fractures, which pose a significant risk for post-fall morbidity and mortality.
- Post-fracture mortality risk is estimated to be 20%-40% within the first year and to remain increased for many years thereafter.
- Up to 50% of those who fear falling limit or exclude social or physical activities because of the fear.

Risk Factors

The frequency of falls increases with age and frailty level. While the elderly with multiple health impairments are at greatest risk, healthy older persons also fall each year. Although falls among older adults are common, many can be prevented by understanding their causes.

The causes of falls can be categorized into two general types: intrinsic and extrinsic factors.

Intrinsic Factors

- Advanced age
- Acute/chronic conditions
- Impaired vision
- Orthostatic hypotension
- Poor gait
- Previous fall
- Reduced cognition
- Urinary incontinence

Extrinsic Factors

- Environmental hazards
- Psychoactive medications
- Inappropriate footwear
- Recent hospitalization
- Use of assistive devices
- Polypharmacy

Many falls in the elderly are likely multifactorial, resulting from the convergence of several risk factors.

DID YOU KNOW?

- Fatal falls rates increase exponentially with age for both sexes, highest at the age of 85 years and over.
- Vascular diseases, chronic obstructive pulmonary disease, depression, and arthritis are associated with a 32% increased risk of falls among the elderly.
- In the elderly living in the community, 30%–50% of falls are due to environmental causes.

The Impact of Medications

Four out of every five older adults take at least one prescription medication daily. In assisted living facilities, on average, residents are on nine to 10 simultaneous medications.

Inappropriate polypharmacy — the use of excessive or unnecessary medications — increases the risk of adverse drug effects, including falls, cognitive impairment, and harmful drug-drug and drug-disease interactions. Polypharmacy is often marked by prescribing cascades, in which medication prescribed to treat one condition worsens others or creates symptoms that prompt subsequent additional medication use.

Select drug classes are considered high fall risk, due to their demonstrated propensity to potentiate falls, especially in older adults.

Residents should consult with their physician or pharmacist about adverse drug effects as well as any high-risk drugs they may be taking. There may be options to lower the doses or discontinue drugs associated with falls in favor of safer therapeutic alternatives as well as reduce the total number of medications overall.

The **side effects** from these drugs can cause several changes in the way a resident feels or thinks that can increase the risk of falling, such as:

- Drowsiness
- Depressed psychomotor functions
- Dizziness
- Loss of balance
- Vision changes
- Slowed reaction times

The CDC's STEADI-RX program for fall prevention highlights medications known to elevate fall risk. The program incorporates a total of nine drug classes for healthcare providers to review when conducting a resident-specific fall risk evaluation.

Consultant pharmacists can provide medication regimen reviews (MRRs) that align with the STEADI-RX concept of "SAFE" reviews for fall risk management – Screen, Assess, Formulate, and Educate. Upon review, pharmacists will provide essential recommendations to facility prescribers for medication regimen optimization.

STEADI-RX Fall Risk Drug Classes	
Anticonvulsants	Benzodiazepines
Antidepressants	Opioids
Antihypertensives	Sedative Hypnotics
Antipsychotics	Tricyclic Antidepressants
Antispasmodics	

SAFE Medication Reviews and Impactful Prescriber Rcommendations

S

Consultant pharmacists are trained to **screen** residents receiving medications and keenly monitor for lapses in safety or efficacy, especially instances of excessive, unnecessary, or suboptimal medication use, where risks may outweigh benefits or more appropriate therapeutic options exist. Through standard MRRs, consultant pharmacists are well positioned to perform the medication screening function, and can focus reviews for medications that may increase fall risk.

A

Today's healthcare landscape prioritizes patient-focused care models, encouraging consultant pharmacists to perform resident-specific **assessments** to best manage an individual's health conditions. This includes identifying barriers to care and assessing current medication regimens against treatment goals and potential side effects – including fall risk potential.

F

Consultant pharmacists then **formulate** medication action plans, providing clear recommendations to residents' prescribers to stop medications when possible, switch to safer alternatives as appropriate, and reduce medications to the lowest effective doses. Recommendations often focus on deescalating therapy, when appropriate, to minimize adverse event potential (such as falls).

E

The fall-risk reduction process is not considered finished until the patient and caregiver are appropriately **educated** about the medication changes and relevant fall prevention strategies. The consultant pharmacist is available and often used as a reference, providing resources and education to equip nursing staff with the tools and information to lead these resident discussions.

DID YOU KNOW?

- Each time a new medication is added to a resident's regimen, check with a doctor, pharmacists or other medical provider to see if medications can be reduced, switched or even stopped to reduce fall risk.
- It is estimated that exposure to benzodiazepines increases the risk of falling by 50%.

Nurses Collaborate on Fall Risk Reviews

Remember, while medications are a significant contributor to potential falls, fall risk is multifactorial and due diligence for fall prevention does not end with medication assessment and optimization alone. There are other factors the clinical care team should review in residents' charts for a comprehensive fall risk assessment, considering contributing criteria beyond the impact of medications incorporated in this calculated report. Other factors significant to fall risk potential include:

- History of falls
- Comorbidities
- Altered gait
- Ambulatory aid requirements
- Presence of IV lines
- Mental status deficits

Morse Fall Scale

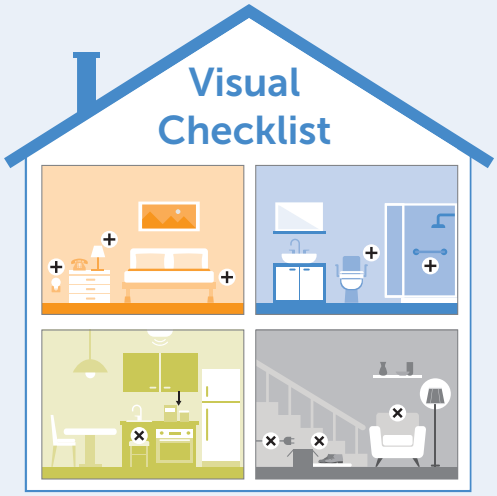
Item	Item Score	Patient Score
1. History of falling (immediate or previous)	No 0 Yes 25	_____
2. Secondary diagnosis (≥2 medical diagnoses in chart)	No 0 Yes 15	_____
3. Ambulatory aid None/bedrest/nurse assist Crutches/cane/walker Furniture	 0 15 30	_____
4. Intravenous therapy/heparin lock	No 0 Yes 20	_____
5. Gait Normal/bedrest/wheelchair Weak Impaired	 0 10 20	_____
6. Mental status Oriented to own ability Overestimates/forgets limitations	 0 15	_____
TOTAL SCORE: Tally the patient score and record 0: No risk for falls <25: Low risk 25 to 45: Moderate risk >45: High risk		_____

The Morse Fall Scale (MFS) is an assessment tool with accepted use as a reliable and validated measure of fall risk in the post-acute care setting. Proponents of this scale cite its sound structure for comprehensive fall risk evaluation and its relative ease of use for nursing staff to smartly perform resident evaluations. The 6-point tool is intended to be used in conjunction with clinical assessment and medication review.

Prevention

As people age, physical changes can make it harder to get around or to do so safely. In fact, slipping, tripping and stumbling are the primary ways elders fall. But falls are not inevitable, even as residents get older. There are steps residents can take to maintain their mobility and reduce the risk of falling. Encourage residents to:

- **Get a Physical:** A physician can identify health issues that may increase the risk of falling such as low blood sugar or drops in blood pressure when standing up, and advise residents of specific things they can do.
- **Review Medications:** Since some medications can impact an individual's ability to walk or move around safely, residents should routinely request a review of medications and ask about non-pharmacological interventions and medication tapering and/or discontinuation. The reviews should include both prescription and over-the-counter medications.
- **Have a Yearly Eye Exam:** Eye problems can increase the risk of falls so residents should have a medical eye exam each year, address any issues and update eyeglasses, if necessary.
- **Maintain Strength and Balance:** Residents should take part in a regular exercise program with strength and balance activities such as Tai Chi to help improve stability.
- **Live a Healthy Lifestyle:** Not smoking, moderate alcohol consumption, and maintaining weight within normal ranges can minimize fall risks in older adults.
- **Modify the Home:** Residents can protect themselves in their units by reducing fall hazards.



Fall Prevention AROUND THE HOUSE

- Keep objects off the floor.
- Remove or tape down rugs.
- Coil or tape cords and wires next to the wall and out of the way.

Fall Prevention KITCHEN

- Put often-used items within easy reach (about waist level).
- For items not within easy reach, always use a step stool and never use a chair.

Fall Prevention BEDROOMS

- Use bright light bulbs.
- Place lamps close to the bed where they are within reach.
- Put in night-lights to be able to see a path in the dark. For areas that don't have electrical outlets, consider battery-operated lights.
- Ensure proper bed height (when sitting on edge of bed, knees should be 90 degrees, with both feet flat on the floor).
- Provide stable chairs with armrests to help people with weak arms stand up safely.
- Position closet shelves between waist and shoulder height to avoid excessive bending/reaching.

Fall Prevention STEPS

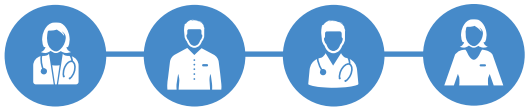
- Check for loose or uneven steps. Repair if needed.
- Make sure carpet is firmly attached to every step, or remove carpet and attach non-slip rubber treads.
- Check for loose or broken handrails. Repair if needed.
- Consider installing handrails on both sides of the stairs.
- Use bright overhead lighting at the top and bottom of the stairs.
- Consider putting light switches at both the top and bottom of the stairs.

Fall Prevention BATHROOMS

- Put non-slip rubber mats or self-stick strips on the floor of the tub or shower.
- Consider installing grab bars for support getting in or out of the tub or shower, and up from the toilet.
- Utilize shower chairs/transfer benches/toilet riser if needed.

DID YOU KNOW?

- 70% of falls in the home occur in the bathroom.



Community Interventions

Considerable evidence shows that most falls among older persons are associated with identifiable and modifiable risk factors. Long-term care communities can stage interventions to help residents identify if they are at a high risk for a fall so they can take steps to protect themselves.

Communities can ask several important questions to assess the risk (see the following Fall Risk Questionnaire for more):

- Are you taking four or more medications?
- Do you suffer from weakness?
- Are you depressed?
- Do you have any gait/balance abnormalities?
- Is your vision impaired?
- Do you have a history of falls?

The CDC has developed the Stopping Elderly Accidents, Deaths, and Injuries (STEADI) initiative to guide nurses and other healthcare providers in (1) screening older adults for fall risk, (2) assessing modifiable risk factors, and (3) intervening to reduce risk by using effective clinical and community strategies.

Communities can also help by educating residents and their caregivers on fall risk and prevention, keeping in mind the importance of shifting the conversation from strictly fall prevention, which can be perceived as an "elderly person's issue," to maintaining independence, confidence, and engagement.

Lastly, don't forget to engage the medical director, since facility leadership can be crucial to executing impactful changes for fall risk mitigation. You may want to consider using a standardized template when identifying residents at high fall risk to ensure important elements for consideration are not neglected (next page).

Sources:

1. Get the Facts on Fall Prevention (2023), National Council on Aging
2. Falls (2021), World Health Organization
3. Fall Prevention Resources (2024), Centers for Disease Control and Prevention
4. Fact Sheet: Falls (2023), Aging.com
5. Falls and Fractures in Older Adults: Causes and Prevention (2022), National Institute on Aging
6. Mortality Following Hip Fracture in Older Adults With and Without Coronary Heart Disease (2023), American Journal of Medicine
7. The Dangers of Polypharmacy and the Case for Deprescribing in Older Adults (2021), National Institute on Aging
8. The Role of Pharmacists in Preventing Falls among America's Older Adults (2016), Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC
9. Benzodiazepine Use in Older Adults: Dangers, Management, and Alternative Therapies (2016), Mayo Clinic Proceedings

Fall Risk Questionnaire

This Fall Risk Questionnaire builds off the structure provided in the Morse Fall Scale and Medication Fall Risk Calculators, to guide users in asking the pivotal questions for determining a resident's fall risk.

Medications

The following medications pose the potential to increase resident's fall risk. Please assess the current risk-benefit balance for continued use of these medications. Where appropriate, recommendations for alternative therapies or supplemental notes have been provided. Please contact the consultant pharmacist if available, with any questions.

1. _____ Alt. recommendation: _____ Notes: _____
2. _____ Alt. recommendation: _____ Notes: _____
3. _____ Alt. recommendation: _____ Notes: _____
4. _____ Alt. recommendation: _____ Notes: _____
5. _____ Alt. recommendation: _____ Notes: _____

Ambulatory Aids

Are correctly fitted ambulatory aids being used by resident, corresponding to their support needs? __Y __N

Comments: _____

IV Therapies

The presence of IV apparatus can tether the resident and pose a fall hazard.

Can any current IV therapy be discontinued or converted to non-IV option? __Y __N

Comments: _____

Gait Imbalance

Is gait imbalance contributing to fall risk ? __Y __N
PT evaluation appropriate? __Y __N

Comments: _____

Altered Mental Status

Is resident's self-assessment of their own ability to ambulate consistent with their objective ability/ambulatory order? __Y __N

Comments: _____

Osteopenia/Osteoporosis

Does resident have osteopenia/osteoporosis? __Y __N
Add medication order for osteopenia/osteoporosis? __Y __N

Comments: _____

Vitamin D Deficiency

Order a 25-hydroxy vitamin D level? __Y __N
If low: order vitamin D supplementation? __Y __N

Comments: _____

Vision

Is resident's vision a potential contributing factor to fall risk? __Y __N If yes, order vision testing? __Y __N

Comments: _____

Hearing

Is resident's hearing a potential contributing factor to fall risk? __Y __N If yes, order audiometry? __Y __N

Comments: _____

To learn how PharMerica can help your community to reduce fall risk, contact your Consultant Pharmacist.