Fall Risk Prevention

Training Presentation

July 31, 2023

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Introduction

The purpose of this presentation is to:

- Educate healthcare providers on fall risk among community-dwelling older adults
- Describe steps providers can take to address and prevent falls
- To reduce falls among older adults 65 and older while promoting health and independence

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Overview

- The burden of falls
- CDC's STEADI initiative
  - Screen
  - Assess
  - Intervene
- Integrating fall prevention into practice
- Question/Answer

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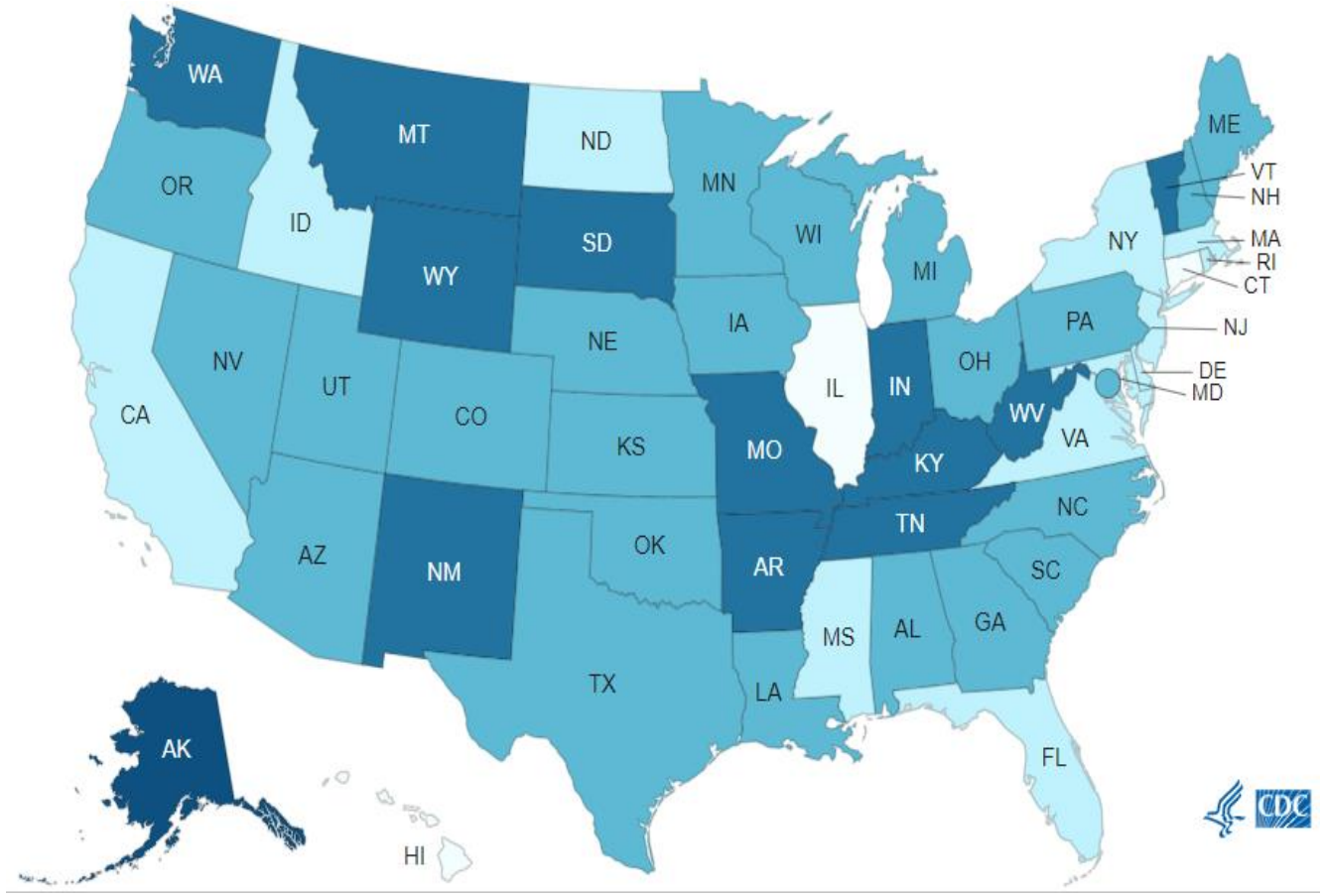
The Burden of Falls in Older Adults

- Nationally, about one in four adults (28%) age 65 and older, report falling each year. Resulting in about 36 million falls each year.
- About 37% of those who fall reported an injury that required medical treatment or restricted their activity for at least one day, resulting in an estimated 8 million fall injuries.[1]

Older Adult Falls Reported by State (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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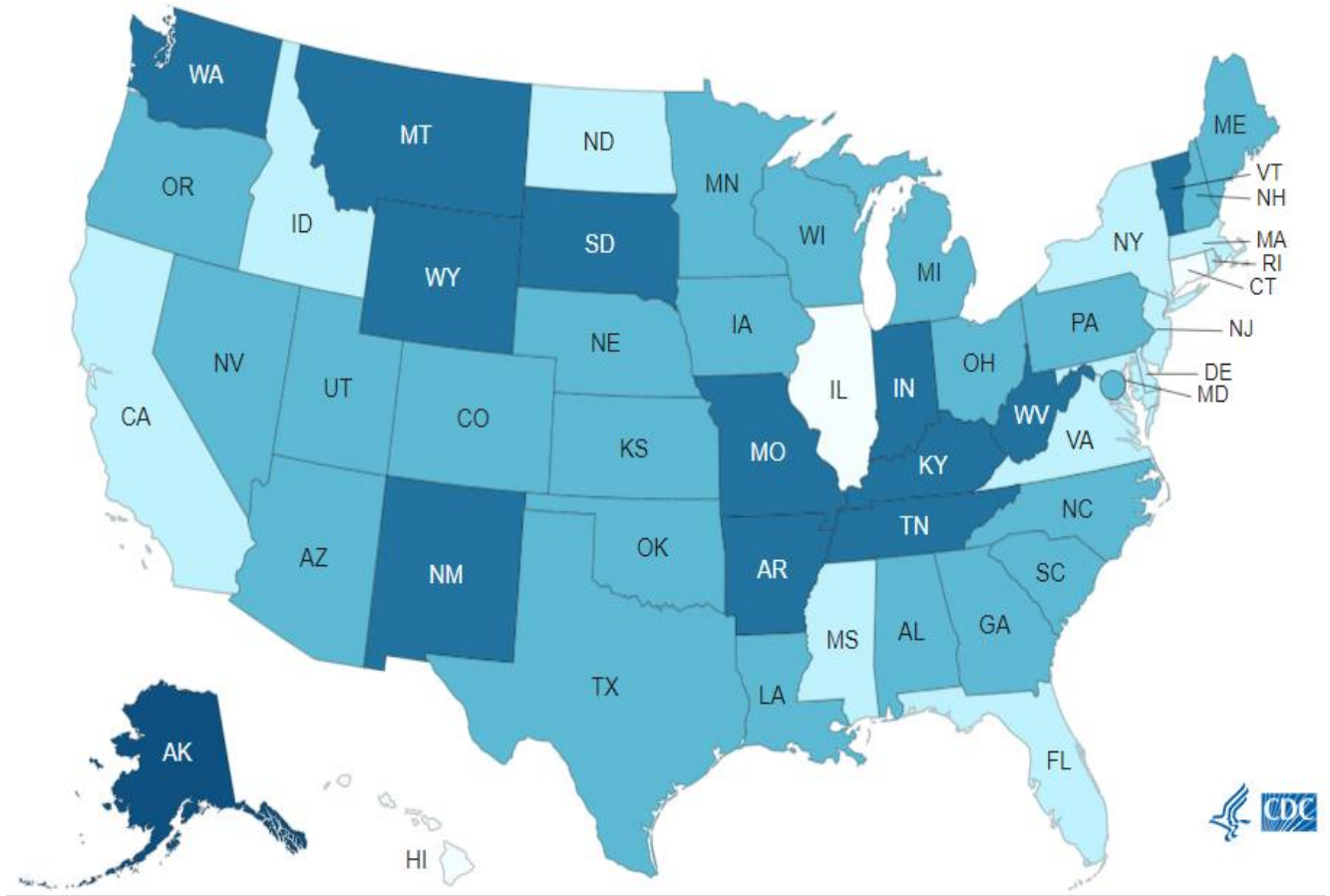
Deaths from Older Adult Falls

- Nationally, falls are the leading cause of injury-related death among adults aged 65 and older, and the age-adjusted fall death rate is increasing. [2,3]
- The age-adjusted fall death rate increased by 41% from 55.3 per 100,000 older adults in 2012[1] to 78.0 per 100,000 older adults in 2021.[4]

Death from Older Adult Falls (2021 Statistics)



Age-Adjusted Death Rates*

- 30.7 - < 48.93
- 48.93 - < 67.15
- 67.15 - < 85.38
- 85.38 - < 103.6
- 103.6 - < 121.83
- 121.83 - < 140.05
- 140.05 - < 158.28
- 158.28 - 176.5

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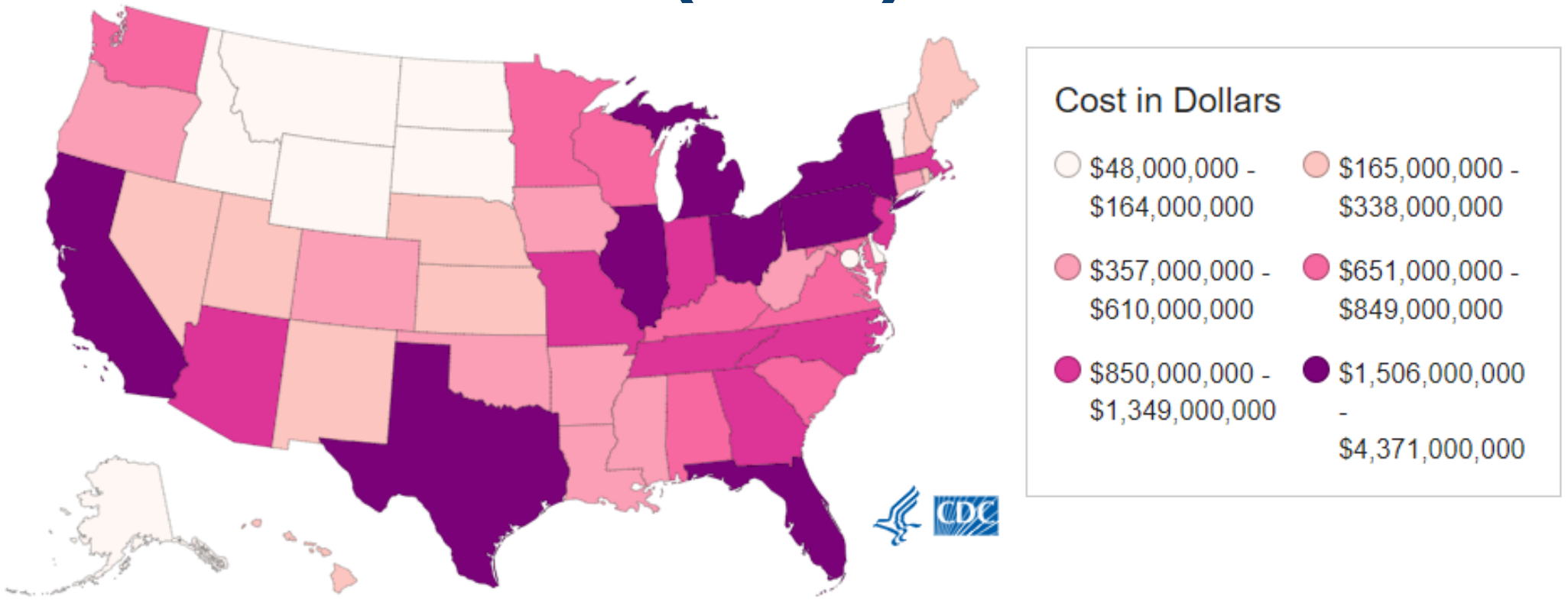
Cost of Older Adult Falls

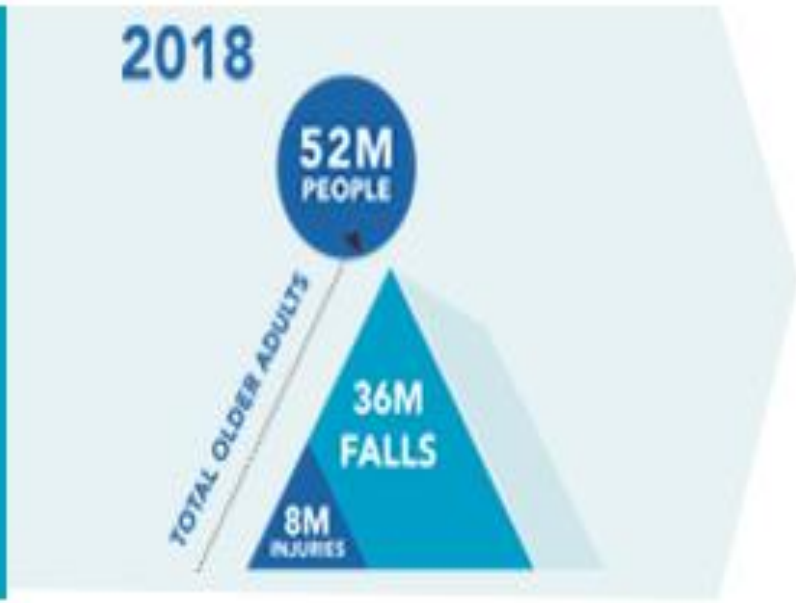
- Nationally each year about $50 billion is spent on medical costs related to non-fatal fall injuries and $754 million is spent related to fatal falls.[5]

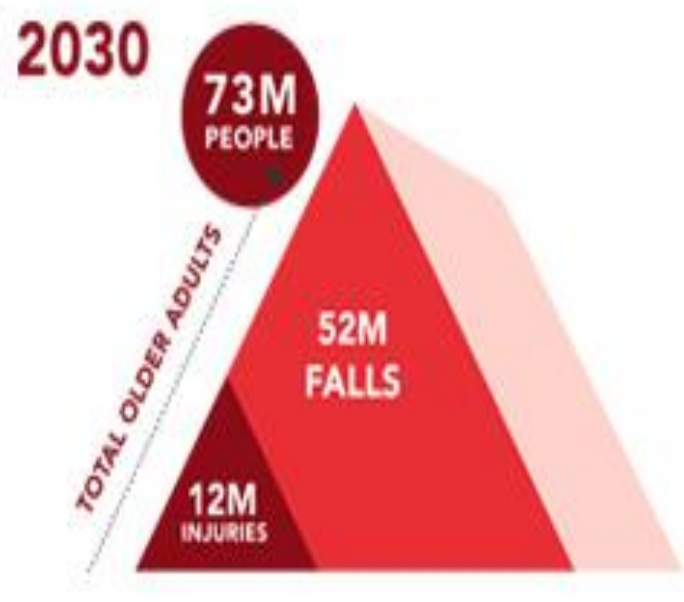
- Non-fatal falls:
  - $29 billion is paid by Medicare
  - $12 billion is paid by private or out-of-pocket payers
  - $9 billion is paid by Medicaid

State Cost of Older Adult Falls (2014)



Fall Predictions





Fall Risk Factors

Non-Modifiable

- Age
- Sex
- Race/Ethnicity
- History of falls

Modifiable

- Balance/gait difficulties
- Lower extremity weakness
- Adverse drug events & polypharmacy
- Vitamin D deficiency
- Orthostatic hypotension
- Visual impairment
- Foot issues/improper footwear
- Home hazards

Common Health Conditions

- Neurological conditions (stroke, Parkinson’s, Dementia)
- Depression
- Musculoskeletal conditions (arthritis)
- Cardiac conditions (arrhythmia)
- Diabetes
- Urinary incontinence

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CDC's STEADI Initiative

(Stopping Elderly Accidents, Deaths & Injuries)

STEADI consists of three core elements:

- **Screen** patients for fall risk,
- **Assess** modifiable risk factors, and
- **Intervene** to reduce risk by using effective clinical and community strategies.

- Resources: STEADI - Older Adult Fall Prevention | CDC

STEADI Algorithm for Fall Risk Screening, Assessment, and Intervention among Community-Dwelling Adults 65 years and older

START HERE

1 SCREEN for fall risk yearly, or any time patient presents with an acute fall.

Available Fall Risk Screening Tools:

- **Stay Independent: a 12-question tool** [at risk if score ≥ 4]
  - **Important:** If score < 4, ask if patient fell in the past year (If **YES** → patient is at risk)
- **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?
    - » If **YES** ask, "How many times?" "Were you injured?"

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

SCREENED AT RISK

2 ASSESS patient's modifiable risk factors and fall history.

Common ways to assess fall risk factors are listed below:

Evaluate gait, strength, & balance
Common assessments:
- Timed Up & Go
- 30-Second Chair Stand
- 4-Stage Balance Test

Identify medications that increase fall risk
(e.g., Beers Criteria)

Ask about potential home hazards
(e.g., throw rugs, slippery tub floor)

Measure orthostatic blood pressure
(Lying and standing positions)

Check visual acuity
Common assessment tool:
- Snellen eye test

Assess feet/footwear

Assess vitamin D intake

Identify comorbidities
(e.g., depression, osteoporosis)

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

FOLLOW UP with patient in 30-90 days.

Discuss ways to improve patient receptiveness to the care plan and address barrier(s)

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

Screening Fall Risk For Patients

Check Your Risk for Falling

Circle "Yes" or "No" for each statement below			Why it matters
Yes (2)	No (0)	I have fallen in the past year.	People who have fallen once are likely to fall again.
Yes (2)	No (0)	I use or have been advised to use a cane or walker to get around safely.	People who have been advised to use a cane or walker may already be more likely to fall.
Yes (1)	No (0)	Sometimes I feel unsteady when I am walking.	Unsteadiness or needing support while walking are signs of poor balance.
Yes (1)	No (0)	I steady myself by holding onto furniture when walking at home.	This is also a sign of poor balance.
Yes (1)	No (0)	I am worried about falling.	People who are worried about falling are more likely to fall.
Yes (1)	No (0)	I need to push with my hands to stand up from a chair.	This is a sign of weak leg muscles, a major reason for falling.
Yes (1)	No (0)	I have some trouble stepping up onto a curb.	This is also a sign of weak leg muscles.
Yes (1)	No (0)	I often have to rush to the toilet.	Rushing to the bathroom, especially at night, increases your chance of falling.
Yes (1)	No (0)	I have lost some feeling in my feet.	Numbness in your feet can cause stumbles and lead to falls.
Yes (1)	No (0)	I take medicine that sometimes makes me feel light-headed or more tired than usual.	Side effects from medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I take medicine to help me sleep or improve my mood.	These medicines can sometimes increase your chance of falling.
Yes (1)	No (0)	I often feel sad or depressed.	Symptoms of depression, such as not feeling well or feeling slowed down, are linked to falls.
Total _____		Add up the number of points for each "yes" answer. If you scored 4 points or more, you may be at risk for falling. Discuss this brochure with your doctor.	

This checklist was developed by the Greater Los Angeles VA Geriatric Research Education Clinical Center and affiliates and is a validated fall risk self-assessment tool (Rubenstein et al. J Safety Res; 2011: 42(6)493-499). Adapted with permission of the authors.

ASSESSMENT

Timed Up & Go (TUG)

Purpose: To assess mobility

Equipment: A stopwatch

Directions: Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

NOTE: Always stay by the patient for safety.

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 normal pace.
3. Turn.
4. Walk back to the chair at your normal pace.
5. Sit down again.

② On the word "Go," begin timing.

③ Stop timing after patient sits back down.

④ Record time.

Time in Seconds: _____

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

CDC's STEADI tools and resources can help you screen, assess, and intervene to reduce your patient's fall risk. For more information, visit www.cdc.gov/steadi

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

OBSERVATIONS

Observe the patient's postural stability, gait, stride length, and sway.

Check all that apply:

- ☐ Slow tentative pace
- ☐ Loss of balance
- ☐ Short strides
- ☐ Little or no arm swing
- ☐ Steadying self on walls
- ☐ Shuffling
- ☐ En bloc turning
- ☐ Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

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National Center for Injury Prevention and Control

2017

STEADI Stopping Elderly Accidents, Deaths & Injuries

ASSESSMENT

30-Second Chair Stand

Purpose: To test leg strength and endurance

Equipment: A chair with a straight back without arm rests (seat 17" high), and a stopwatch.

NOTE: Stand next to the patient for safety.

① Instruct the patient:

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

② On the word "Go," begin timing.

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

③ Count the number of times the patient comes to a full standing position in 30 seconds.

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

④ Record the number of times the patient stands in 30 seconds.

Number: _____ Score: _____

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

SCORING

Chair Stand
Below Average Scores

AGE	MEN	WOMEN
60-64	< 14	< 12
65-69	< 12	< 11
70-74	< 12	< 10
75-79	< 11	< 10
80-84	< 10	< 9
85-89	< 8	< 8
90-94	< 7	< 4

A below average score indicates a risk for falls.

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National Center for Injury Prevention and Control

2017

STEADI Stopping Elderly Accidents, Deaths & Injuries

The 4-Stage Balance Test

Patient _____

Date _____

Time _____ ☐ AM ☐ PM

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

Medications Linked to Falls

- Anticonvulsants
- Antidepressants (TCA's, SSRIs, sedative-hypnotics)
- Antipsychotics
- Antispasmodics
- Benzodiazepines
- Opioids
- Sedatives-hypnotics
- Tricyclic antidepressants
- Anticholinergics
- Antihistamines
- Blood pressure medications
- Muscle relaxants
- Over-the-counter medications
- Herbal supplements can cause dizziness, sedation, confusion, blurred vision, or orthostatic hypotension

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Screened NOT At Risk

- Educate participants and staff on fall prevention
- Assess Vitamin D intake – if deficient, recommend daily Vitamin D supplement
- Recommend exercise or fall prevention program
- Reassess monthly, quarterly, yearly, or any time the patient has an acute fall

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Screened AT Risk

- May need PT or fall prevention program (i.e. Tai Chi)
- Identify medications that increase fall risk (involve pharmacist)
- Ask about potential environmental hazards (rugs, slippery tubs, lamp wires). May need an OT referral
- Measure orthostatic blood pressure (Lie down for 5 minutes, check BP; then stand up for 3 minutes and repeat BP check. If BP drops at least 20 systolic or 10 diastolic = orthostatic hypotension)
- Check visual acuity (Snellen eye test)
- Assess feet/footwear
- Assess Vitamin D intake
- Identify comorbidities (depression, osteoporosis)

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Intervene

Create a support document or update the ISP with a fall safety plan.

- Health goals Poor gait, strength & balance: Refer to physical therapy, encourage fall prevention program (Tai Chi)
- Medications: Work with physician and pharmacist to optimize medications by stopping, switching, or reducing the dosage of medications that increase fall risks

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Intervene

Home Hazards: Refer to an occupational therapist to evaluate home safety

- Complete an environmental check on the home environment or surroundings.
- Remove clutter and obstacles

Orthostatic hypotension observed:

- Stop, switch, and reduce the dose of medications per physician's orders
- Educate about importance of exercises (foot pumps; slowly rising from laying & sitting positions)
- Establish appropriate blood pressure goals
- Encourage adequate hydration
- Consider compression stockings

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Intervene

Visual Impairment observed:

- Obtain referral to an ophthalmologist/optometrist
- Stop, switch, and reduce dose of medications affecting vision (anticholinergics)
- Consider cataract surgery
- Educate on depth perception and single vs. multifocal lenses

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Intervene

Feet/footwear issues:

- Educate on shoe fit, traction, insoles, heel height
- Obtain referral to podiatrist

Vitamin D deficiency:

- Recommend daily Vitamin D supplement – consult a physician first

Comorbidities:

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

Follow up with the patient in 30-90 days

Mange Fall Program - Collect Fall Data

- Identify data needed to measure program success
- Work with information technology staff to enable data collection
- Enter fall data into the medical record
- Review medical records to ensure all results and referrals are recorded

Mange Fall Program

Monitor the progress of fall prevention measures:

- Long-Term Management: Screening at admission, quarterly, annually, and change of condition is key in identifying residents at high risk of a fall
- Immediate Management: Careful evaluation, investigation, and immediate intervention during the first 24 hours
- Conduct staff training, including refresher and new staff training

If I'm a Service Coordinator, what do I do with this information:

- Document fall risk in ISP.
- Document fall risk and questions in monthly and quarterly SC narratives or case notes.
- Reassess fall risk –
  - Do I need to adjust services? Adjust the Service Plan?
  - Does the equipment need to be adjusted? (i.e.: wheelchair, walker, cane, etc.)
  - Is the home environment and surroundings safe? Examples: Is using the bathroom at night safe? Are hallways safe and free of clutter or obstacles? If no, remove obstacles that will make it safe.
- Do I need to contact home health for more assistance?
- Consider contacting the Managed Care Organization (MCO) for additional resources available and/or to support the person with finding additional resources.
- Is a higher level of care an option? If yes, request more services for the participant.
- Document a phone call to the participant's physician reporting falls and seek medical advice.
- Document and track fall data to assist in getting more services or help. Create a spreadsheet to track falls and document the circumstances surrounding the fall (i.e.: time of day, medication changes, a recognized decline in health, etc.).
- Consider alternatives such as physical therapy, Tai Chi, or yoga exercises to build strength and balance.

If I am a Provider, what do I do with this information:

- Document fall risk in the ISP, and create a safety plan in the ISP, or BSP if applicable.
- Train your staff. Share the training, plan training, and implement the training.
- Conduct an environmental review of the participant's surroundings and identify risks.
- Fall risk should be specific to the participant and their needs
- Reassess fall risk monthly, quarterly, etc. – Do I need to ask for more services?
- Does the equipment need to be adjusted? (i.e.: wheelchair, walker, cane, boot, etc.)
- Is using the bathroom at night safe? Are hallways safe? If no, remove clutter and obstacles.
- Is a higher level of care needed? If yes, ask service coordination for assistance.
- Document a phone call to the participant’s physician reporting falls and seek medical advice.
- Document and track falls for data to assist in getting more services or help. Create a spreadsheet to track falls and the circumstances around the fall.
- Are there any local, county, city, or state resources available?
- Consider alternative exercises to build strength and balance, such as physical therapy, yoga, etc.

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Summary

There are simple steps you can take to prevent falls and decrease fall risks.

Familiarize yourself with the CDC's STEADI initiative which includes educational materials and tools to improve fall prevention.

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Q&A

We have provided a series of Q&A activities for you to test your memory on the content of this presentation.

Fall Prevention Quiz

3 Questions to test your knowledge!

* Required

1. Choose whether the statement is true or false:
   STEADI consists of three core elements.

   1.Screen patients for fall risk
   2.Assess modifiable risk factors
   3.Intervene to reduce risk by using effective clinical and community strategies. *

   - ◯ True
   - ◯ False

https://www.surveymonkey.com/r/Z8XS9P8

- Please click on the above link for a short survey and to **submit questions or feedback** for the question-and-answer session.
- The Q&A session will be held via web meeting approximately 30-45 days after this training is posted.
- Invites to the Q&A session will be sent out to providers and service coordinators.

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Questions? Please feel free to reach out to us at Liberty at the emails below or contact the DDD website at the link provided. Resources for Home and Community-Based Services (ne.gov)

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All information presented in this PowerPoint was obtained from the STEADI resources found at STEADI - Older Adult Fall Prevention | CDC

References

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3. Burns ER, Kakara R. Deaths from Falls Among Adults ≥65 Years—United States, 2007–2016. MMWR Morb Mortal Wkly Rep 2018;67:509–514. DOI: Deaths from Falls Among Persons Aged ≥65 Years — United States, 2007–2016 | MMWR (cdc.gov)

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4. Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Mortality 2018-2021 on CDC WONDER Online Database, released in 2021. Data are from the Multiple Cause of Death Files, 2018-2021, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at Underlying Cause of Death, 2018-2021, Single Race Request (cdc.gov)

5. Florence CS, Bergen G, Atherly A, Burns ER, Stevens JA, Drake C. Medical Costs of Fatal and Nonfatal Falls in Older Adults. Journal of the American Geriatrics Society, 2018 March, DOI:10.1111/jgs.15304

Fall Risk Resources

- Stay Independent (Fall Risk Self Assessment) Stay Independent (cdc.gov)
- Fall Risk Checklist Checklist Fall Risk Factors (cdc.gov)
- Risk Factors for Falls Fact Sheet Risk Factors for Falls (cdc.gov)
- Medications Linked to Falls Fact Sheet Medications Linked To Falls (cdc.gov)
- Postural Hypotension: What It Is and How to Manage It Postural Hypotension What it is & How to Manage it (cdc.gov)
- Check for Safety: A Home Fall Prevention Checklist for Older Adults Check For Safety A Home Fall Prevention Checklist For Older Adults (cdc.gov)

Fall Prevention Services Resources

- Collaborative Practice Agreements and Pharmacists' Patient Care Services: A Resource for Pharmacists Collaborative Practice Agreements and Pharmacists' Patient Care Services: A Resource for Pharmacists (cdc.gov)
- Creating Community-Clinical Linkages Between Community Pharmacists and Physicians Creating Community-Clinical Linkages Between Community Pharmacists and Physicians (cdc.gov)
- Exercise & Physical Activity: Your Everyday Guide from the National Institute on Aging Exercise and physical activity | National Institute on Aging (nih.gov)

Medication Fall Risk Resources

- Checklist for Prescribing Opioids for Chronic Pain Checklist for prescribing opioids for chronic pain (cdc.gov)
- Nonopioid Treatments for Chronic Pain Alternative Treatments Fact Sheet. (cdc.gov)
- Pocket Guide: Tapering Opioids for Chronic Pain Pocket Guide: Tapering Opioids for Chronic Pain (cdc.gov)
- Alternative Medications for High-Risk Medications in the Elderly Alternative Medications for Medications in the Use of High-Risk Medications in the Elderly and Potentially Harmful Drug–Disease Interactions in the Elderly Quality Measures - Hanlon - 2015 - Journal of the American Geriatrics Society - Wiley Online Library
- Deprescribing Algorithms Deprescribing.org - Optimizing Medication Use