Finding Our Balance: Preventing Older Adult Falls in Rural Areas through Evidence-Based Tools

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Presenter:
Carolyn Ham
Older Adult Falls Prevention Specialist
Injury and Violence Prevention
Washington State Department of Health
Presentation Overview

- Falls As A Public Health Issue
- Evidence-Based Screening and Intervention
- Case Studies
- Clinical and Community Connections
Falls Are Preventable

Home Safety

Screening

Exercise

Check Your Risk for Falling

<table>
<thead>
<tr>
<th>Check Your Risk for Falling</th>
<th>Why It Matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>You fall in the last year.</td>
<td>People who have fallen once are likely to fall again.</td>
</tr>
<tr>
<td>You fall often.</td>
<td>People who have fallen often may need to make changes.</td>
</tr>
<tr>
<td>You have fallen while standing or sitting.</td>
<td>This is a sign of poor balance.</td>
</tr>
<tr>
<td>You have fallen while rising from a chair.</td>
<td>This is a sign of poor balance.</td>
</tr>
<tr>
<td>You have fallen while walking or standing.</td>
<td>This is a sign of poor balance.</td>
</tr>
</tbody>
</table>

Total

Add up the number of points for each "Yes" answer. If your total is 7 or more, you may be at risk for falling. Please talk to your doctor about your risks.

For more information, visit the WA State Department of Health's website.

WA State DOH | 5
Negative Cycle of Falling

- Falls
- Fear of Falling
- Decreased Functional Ability
- Limiting Activity
- Loss of Independence
Falls in the US

- More than 95% of hip fractures are caused by falling
- Falls are the most common cause of traumatic brain injury for older adults
- Falls are the leading cause of injury-related death and hospitalization for ages 65+

Every 20 minutes an older adult dies from a fall in the United States. Many more are injured. Take a stand to prevent falls.
1 in 3 older adults falls every year

In **2016**: 19,060 fall-related **hospitalizations** and 887 deaths

571.8 million dollars estimated cost from falls yearly

WA State DOH | 8
State and National Response

- National Council on Aging Falls Free Resource Center

- Centers for Disease Control and Prevention

- Washington State Falls Prevention Program
  - Coalition & State Action Plan
  - Evidence Based Programs
  - Training for Healthcare Providers
Challenges and Opportunities in Rural Areas

- Availability of providers for screening and intervention
- Lack of program availability
- Rapidly aging population
- Distance to care
  - Transportation
- Volunteer Leadership
- Cohesiveness
- Strong organizations

Source: Geographic Comparison Tables 0103 and 0104, 2012-2016 American Community Survey 5-Year Estimates
Evidence-Based Screening and Intervention
Leading Risk Factors For Falls

- Decreased leg strength and balance
- Unsafe home environment
- Taking more than four medications
- Fear of falling
- Vision and Hearing Problems
- Decreased sensation in feet
- Malnutrition
- Alcohol and Substance Misuse
- Nocturia
- Cognitive Impairment*
- Advanced Age*
- Previous falls, especially with injury*
- Chronic Conditions*

*Non-Modifiable
CDC STEADI Tool

- Created in collaboration with University of Washington
- Aimed at Primary Care Providers
  - Separate online training for Pharmacists
  - Can be used in multiple settings, by any healthcare provider
  - Can be used in the community as an outreach tool
- Self-Assessment Questionnaire
- Functional Tests
- Referral Algorithm
- Extra Clinical Tools

www.cdc.gov
### STEADI Self Assessment Tool

#### Check Your Risk for Falling

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

**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.

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

1. Explain the directions
   A. Sit in the middle of the chair
   B. Do not use your hands to push
   C. When I say “go”, stand up and sit down as many times as you can in 30 seconds
   D. Stand up all the way each time, and sit safely

2. Prepare your stopwatch/timer

3. Time the test

4. Record the score
   ➢ Using normative values
30 Second Chair Stand Test - Scoring

- Normative Values:

<table>
<thead>
<tr>
<th>SCORING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chair Stand Below Average Scores</td>
</tr>
<tr>
<td>AGE</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>60-64</td>
</tr>
<tr>
<td>65-69</td>
</tr>
<tr>
<td>70-74</td>
</tr>
<tr>
<td>75-79</td>
</tr>
<tr>
<td>80-84</td>
</tr>
<tr>
<td>85-89</td>
</tr>
<tr>
<td>90-94</td>
</tr>
</tbody>
</table>

A below average score indicates a risk for falls.
Four Stage Balance Test

1. Explain the test
   A. Four testing positions
   B. Can have help to get into position
   C. Must hold position on their own
      ➢ Cannot use assistive device

2. Time each position for ten seconds
   ➢ If patient holds the position for ten seconds, move to the next position

3. Stop test when patient cannot hold a position for full 10 seconds

4. Record the last position they completed successfully
Four Stage Balance Test - Practice

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
Timed Up and Go (TUG) Test - Practice

1. Explain the test
   A. When I say go, you will
      - Stand up, walk to the line, turn and walk back
      - Can use arms to push up if needed
      - Can use assistive devices if needed

2. Time the test
   1. Timer starts when you say go
   2. Timer stops when the patient sits down

3. Score the test
Timed Up and Go (TUG) Test - Scoring

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.

NOTE: Always stay by the patient for safety.

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.

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.
STEADI Referral Algorithm

START HERE: Patient completes the *Stay Independent* brochure

**Screen for fall risk**
Patient scores ≥ 4 on the *Stay Independent* brochure

- OR -
Clinician asks key questions:
  - Fell in past year?
  - If *YES* fall, how many times? Were you injured?
  - Feels unsteady when standing or walking?
  - Worries about falling?

Score ≥ 4 — OR — YES to any key question

**Evaluate gait, strength, & balance**
- Timed Up & Go (recommended)
- 30-Second Chair Stand (optional)
- 4-Stage Balance Test (optional)

No gait, strength or balance problems*

**LOW RISK** Individualized fall interventions
- Educate patient
- Vitamin D +/- calcium
- Refer for strength & balance exercises (community exercise or fall prevention program)

**MIXED RISK** Individualized fall interventions
- Educate patient
- Vitamin D +/- calcium
- Refer to PT to improve gait, strength, and balance

**HIGH RISK** Individualized fall interventions
- Educate patient
- Vitamin D +/- calcium
- Refer to PT to enhance functional mobility & improve strength & balance
- Manage & monitor hypotension
- Manage medications
- Address foot problems
- Optimize vision
- Optimize home safety

Follow up with HIGH RISK patient within 30 days
- Review care plan
- Assess & encourage fall risk reduction behaviors
- Discuss & address barriers to adherence

Transition to maintenance exercise program when patient is ready

*For these patients, consider additional risk assessment (e.g., medication review, cognitive screen, incontinence).*
### Modifying Risk Factors For Falls

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Intervention</th>
<th>Low Barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strength &amp; Balance Impairment</td>
<td>PT, Evidence Based Programs</td>
<td>STEADI Sit to Stand Exercise</td>
</tr>
<tr>
<td>Fear of Falling</td>
<td>Evidence Based Programs</td>
<td>Caregiver Falls Prevention Conversation Guide (NCOA)</td>
</tr>
<tr>
<td>Unsafe Home Environment</td>
<td>OT, TSOA, Home modification</td>
<td>DOH Resource Guides</td>
</tr>
<tr>
<td>Medications</td>
<td>Review Meds, Change as needed</td>
<td>Use Medication Risk Fact Sheet</td>
</tr>
<tr>
<td>Vision, Sensation, Hearing, Nocturia</td>
<td>Specialist Appointments</td>
<td>Ask and notice changes</td>
</tr>
<tr>
<td>Malnutrition</td>
<td>Nutritionist</td>
<td>Meals on Wheels</td>
</tr>
<tr>
<td>Substance Misuse</td>
<td>Counseling and Treatment</td>
<td>Ask and notice changes</td>
</tr>
</tbody>
</table>
Case Study 1: Mrs. Booker - Outpatient

Mrs. Booker lives by herself in Napavine, on a road near the senior center. She completes the Stay Independent brochure in the waiting room. She circles “Yes” for the statements, “I have fallen in the last 6 months,” and “I take medicine to help me sleep or improve my mood.” Her responses result in a risk score of 3. When asked, Mrs. Booker reports she fell the previous week, but wasn’t hurt, so she didn’t seek medical attention. She says she was out walking with a friend. They were talking and she wasn’t looking where she was going, and she tripped over a crack in the sidewalk. This was her first fall. She’s not afraid of falling. Walking is her only form of exercise. She has incontinence at night and complains of vision problems.

Questions:

1) What referrals might she need to address her risk factors?
2) What education on falls prevention does she need?
3) What risk factors can you address during today’s visit?
Case Study 2: Mr. Cooper - EMS

Mr. Cooper lives with his daughter, 30 minutes outside of Tonasket off a long dirt road. He called 9-1-1 this morning on his phone when he fell out of his chair and could not get up. He states this happened last week and he was on the floor all day until his daughter came home, because he couldn’t reach his phone. He states he fell today because he couldn’t feel his feet and got dizzy when he tried to get up. His walker and glasses are across the room, out of reach. When helping him up, you notice a strong smell of alcohol on his breath. He is interested in having you send information to his doctor, who he has an appointment with next week. He agrees to fill out the STEADI Self-Assessment Questionnaire and scores a 9.

Questions:
1) What referrals might he need to address his risk factors?
2) What education on falls prevention does he need?
3) What risk factors can you address during today’s visit?
Finding Our Balance

CLINICAL AND COMMUNITY CONNECTIONS
Patient Education Materials and Additional Clinical Tools

www.cdc.gov/steadi

Postural Hypotension
What it is & How to Manage it

Check for Safety
A Home Fall Prevention Checklist for Older Adults

What YOU Can Do to Prevent Falls

ASSESSMENT
Measuring Orthostatic Blood Pressure

1. Have the patient lie down for 5 minutes.
2. Measure blood pressure and pulse rate.
3. Have the patient stand.
4. Repeat blood pressure and pulse rate measurements after standing 1 and 3 minutes.

A drop in BP of 20 mm Hg, or in diastolic BP of 10 mm Hg, or experiencing lightheadedness or dizziness is considered abnormal.

<table>
<thead>
<tr>
<th>POSITION</th>
<th>TIME</th>
<th>BP</th>
<th>ASSOCIATED SYMPTOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lying Down</td>
<td>5 Mins.</td>
<td>BP___/___</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HR______</td>
<td></td>
</tr>
<tr>
<td>Standing</td>
<td>1 Min.</td>
<td>BP___/___</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HR______</td>
<td></td>
</tr>
<tr>
<td>Standing</td>
<td>3 Mins.</td>
<td>BP___/___</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HR______</td>
<td></td>
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</table>

RECOMMENDED EXERCISE
Chair Rise Exercise
What About the Paperwork...

- Can be part of regular patient education
- EPIC and GE Centricity offer free STEADI module
- Many options – no one form is required for any piece
Washington State Connections

- Community Screening
- Referrals, teaching or supporting evidence based programs
- Local and State Falls Prevention Coalitions
  - Falls Prevention Awareness Day
- DOH Collaboration
  - Training Partnerships
  - Materials
Website

- Resources
- Links
- Data
- News
Questions?
Thank You!

Carolyn Ham
Older Adult Falls Prevention Specialist
Injury and Violence Prevention
Washington State Department of Health

Carolyn.ham@doh.wa.gov
360-236-4795
WA Evidence Based Community Falls Prevention Programs