The Stopping Elderly Accidents, Deaths & Injuries (STEADI) Tool Kit for Health Care Providers

Disclaimer: The findings and conclusions in this presentation are those of the author and do not necessarily represent the official position of the Centers for Disease Control and Prevention
Housekeeping

**Note:** Today’s presentation is being recorded and will be provided within 48 hours.

Two ways to ask questions at the end of the webinar:

1. Submit your text questions and comments using the Questions Panel.
2. Please raise your hand to be unmuted for verbal questions.
General Information

- A copy of the presentation slides will be provided to all participants and posted on the ODH Falls Prevention Web Site.

- A Question & Answer session will follow the presentation
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Falls among Older Adults

The STEADI Tool Kit

Judy A Stevens, PhD
Centers for Disease Control & Prevention

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Objectives

• Burden & impact of falls
• Development of STEADI
• STEADI tool kit materials
Introduction

• 30-35% of people 65+ fall each year\(^1\)
• Those who fall are 2-3 times more likely to fall again\(^2\)
• 1 in 5 falls causes a serious injury\(^3\)

\(^1\) Tromp, J Clinical Epi, 2001.
\(^3\) Sterling, J Trauma-Inj Infection & Critical Care, 2001
Leading Causes of Death from Injuries Among People 65+, 2010

Total = 41,300 deaths

- Falls: 21,649 deaths
- Motor Vehicle: 5,000 deaths
- Suffocation: 4,000 deaths
- Poisoning: 2,500 deaths
- Fire/Burn: 1,500 deaths
- Drowning: 1,000 deaths
- Other: 750 deaths
- Unspecified: 5,000 deaths

NCHS, Vital Records, 2010
Trends in Age-Adjusted Fall Death Rates, Men & Women 65+, 2000-2010

NCHS, Vital Records, 2000-2010
Leading Causes of Nonfatal Injuries Among People 65+, 2010

- Falls: 2.3 million
- Struck by/Against
- Motor Vehicle-Occupant
- Cut/Pierce
- Poisoning
- Bite/Sting
- Other
- Unspecified

Total = 3.7 million injuries

NCHS, WISQARS, 2010
Nonfatal Fall Injury Rates by Sex & Age, 2010

Rate per 100,000

Age groups

NEISS-AIP, 2010
Economic Impact

Cost of fall injuries among people 65+
Adjusted for inflation = $30 billion

• Fatal falls: $0.3 billion
• Nonfatal injuries: $29.9 billion

Stevens JA, Inj Prev, 2006
Fall Risk Factors

- Biological
- Behavioral
- Environmental
Modifiable Risk Factors

**Biological**
- Leg weakness
- Mobility problems
- Problems with balance
- Poor vision

**Behavioral**
- Psychoactive meds
- 4+ medications
- Risky behaviors
- Inactivity

**Environmental**
- Clutter & tripping hazards
- No stair railings or grab bars
- Poor lighting
Evidence for Clinical Interventions

- Chang et al., British Medical Journal, 2004
- Gillespie et al., Cochrane Database of Systematic Reviews, 2012
- Moyer, U.S. Preventive Services Task Force, Annals of Internal Medicine, 2012
Clinical Approach

Clinical Assessment, Treatment, Referral & Follow Up

www.americangeriatrics.org
Stopping Elderly Accidents, Deaths & Injuries
Literature Review

- Did not identify falls & gait disorder or evaluate patients who reported falling
- Only 37% of older adults asked about falls
- Only 8% of primary care physicians used any clinical guideline on fall prevention
- Many physicians were interested in learning about fall risk assessment & risk reduction

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Initial Interviews

90 min interviews with 18 providers

Interview Results

• Recognized falls as a threat for their older patients
• Lacked information on standardized assessment methods & evidence-based prevention strategies
• More reactive than proactive in addressing falls
Interview Results (cont)

• Asked for materials that were direct, concise & easy to read

• Preferred checklists, one-pagers & on-line information
Flow Chart Algorithm

Adapted from AGS/BGS Clinical Practice Guidelines, 2010
Flow Chart Algorithm

Adapted from AGS/BGS Clinical Practice Guidelines, 2010
Stay Independent

A validated self-risk assessment brochure

**Check Your Risk for Falling**

<table>
<thead>
<tr>
<th>Please circle “Yes” or “No” for each statement below.</th>
<th>Why it matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (2) No (0) 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) No (0) 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) No (0) 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) No (0) 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) No (0) I am worried about falling.</td>
<td>People who are worried about falling are more likely to fall.</td>
</tr>
<tr>
<td>Yes (1) No (0) 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) No (0) 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) No (0) 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) No (0) I have lost some feeling in my foot.</td>
<td>Numbness in your feet can cause stumbles and lead to falls.</td>
</tr>
<tr>
<td>Yes (1) No (0) 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) No (0) 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) No (0) 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>
<tr>
<td><strong>Total</strong></td>
<td>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.</td>
</tr>
</tbody>
</table>

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.

Provider Resources
Fact Sheets

Falls are a Major Threat for Your Patients

- One-third of people 65 and older fall each year.
- Less than half of the Medicare beneficiaries who fall each year talk to their healthcare providers about falls.
- Every 29 minutes an older adult dies from a fall.
- 1 out of 5 falls causes serious injury such as a head injury or fracture.
- Over 2 million older adults are treated in emergency departments for non-fatal fall injuries each year.
- Direct medical costs for fall injuries total over $30 billion annually. Hospital costs account for two-thirds of the direct medical costs.

The good news—as a provider, you can prevent many of these injuries.

For more information, go to: www.cdc.gov/injury/STEADI

Medications Linked to Falls

Although many medications contribute to falls, the evidence is strong for a few categories. Medication management plays an important role in reducing falls.

- Medication management includes:
  - Eliminating medications if there is
  - Reducing doses of necessary medications to the lowest effective dose.
  - Avoiding prescribing medications that have risk factors for falls.

The MOST important interventions to prevent falls are:

- Psychoactive drugs, especially antipsychotics.
- Any medications that have antihypertensive effects.
- Sedating OTCs, specifically Tylenol and Benadryl.

There is a full searchable list of medications and medication classes that cause falls.

For more information, go to: www.cdc.gov/injury/STEADI

Risk Factors For Falls

Research has identified many risk factors that contribute to falling—some of these are modifiable.

Most falls are caused by the interaction of multiple risk factors. The more risk factors a person has, the greater their chance of falling. Healthcare providers can help reduce a patient's risk by reducing or eliminating that individual's risk factors.

To prevent falls, providers should focus on these modifiable risk factors:

- Lower body weakness
- Difficulties with gait and balance
- Use of psychoactive medications
- Postural dizziness
- Prior falls
- Problems with feet and/or shoes
- Home hazards

Fall risk factors are categorized as intrinsic or extrinsic:

<table>
<thead>
<tr>
<th>Intrinsic</th>
<th>Extrinsic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Lack of family support</td>
</tr>
<tr>
<td>History of falls</td>
<td>Pain of arthritis</td>
</tr>
<tr>
<td>Muscle weakness</td>
<td>Lack of bathroom grab bars</td>
</tr>
<tr>
<td>Gait &amp; balance problems</td>
<td>Dim lighting or glare</td>
</tr>
<tr>
<td>Fracture history</td>
<td>Obstacles &amp; tripping hazards</td>
</tr>
<tr>
<td>Peroneal hypertension</td>
<td>Slipped on uneven surface</td>
</tr>
<tr>
<td>Chronic conditions including arthritis, diabetes, stroke, Parkinson's, incontinence, dementia</td>
<td>Psychoactive medications</td>
</tr>
<tr>
<td>Fear of falling</td>
<td>Improper use of assistive device</td>
</tr>
</tbody>
</table>

For more information, go to: www.cdc.gov/injury/STEADI

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

STEADI Stopping Elderly Accidents, Deaths & Injuries
Three Case Studies

CASE STUDY 1
Mrs. Booker is a 66 year old woman who lives in her own home. She has come in today for a wellness visit.

History
When asked, Mrs. Booker reports she fell and hurt her hip, but didn’t seek medical attention. She has not visited a doctor for several years. She described how she felt at home with a friend, they were talking and she was working on her laptop. She was going downstairs, and tripped over a crack in the sidewalk.

Mrs. Booker reports that she usually walks inside her house to avoid being outside. She tries to avoid potholes and cracks in the sidewalk so she won’t trip. She has been advised to use a cane to help her walk, but she prefers to walk without it. Walking is her only form of exercise.

Medical Problem List
Seizure disorder
Chronic kidney disease stage 3
Chronic obstructive pulmonary disease
Medications
1. Depakote 250 mg twice daily
2. Zyprexa 12.5 mg daily
3. Ativan 0.5 mg twice daily
4. Levothyroxine 75 mg daily
5. Colace 250 mg daily
6. Tylenol 500 mg 4 times daily as needed

Review of Systems
A 14-point review of systems is positive for pain, urinary incontinence, and nocturia >2 times

CASE STUDY 2
Mr. Ying is an 84 year old Asian male who lives in a house that adjoins his son’s house. Mr. Ying had a clinic visit by his son, who assists with his daily activities.

History Of Current Problem
Mr. Ying stated that for the past year he has had difficulty after sitting or lying down and that he often falls and experiences dizziness in the morning and evening. He has been experiencing symptoms of MS and is being treated by his doctor.

Mr. Ying also mentions that he has been feeling unsteady on his feet when walking. He sees his doctor twice a week for treatment. Mr. Ying has a long history of diabetes and hypertension.

When asked about previous falls, he says he has had several falls and he’s been fearful of falling and becoming a burden to his family.

Although Mr. Ying has spinal stenosis, a relieved his low back pain. Now he sees a chiropractor regularly to help with his pain.

CASE STUDY 3
Mrs. White is an outgoing 79 year old white woman who lives in an assisted living facility. She has come in with her son for a routine follow-up visit. Her son reports that she was seen in the hospital emergency room a week ago because she fell when she was getting out of the shower. She fell backwards and bumped the back of her head against the wall.

Her son remarks that in the past two years, his mother has had “too many falls to count”. Mrs. White agrees that she falls a lot but she’s still energetic.

“Old people fall, that’s just how it is”, she says.

Mrs. White has a history of hypertension, hyperlipidemia, diabetes, coronary artery disease, and congestive heart failure.

History
Mrs. White reports that she used to walk “just fine,” but about two years ago she began falling for no apparent reason. Sometimes she will trip on a carpet, other times she just loses her balance when she’s walking or turning. Once she fell off a chair once as she fell into a wall. Another time she rolled out of bed.

Mrs. White usually falls indoors and has fallen during the day and at night. Sometimes she falls at night when she gets up to void. She always sleeping but is restless, so for the past eight years has been taking Clonazepam to help her sleep.

For the past two years, she has been using a walker. Before that she had a front-wheel walker but couldn’t get used to it. She used to go to the Silver Sneakers exercise classes at her local gym but stopped going about five years ago when she developed numbness in her feet and knee pain. She used to enjoy walking but reports that she hardly ever goes outside now because she’s so afraid of falling and breaking her hip.
Talking with Patients Based on Stages of Change

Talking about Fall Prevention with Your Patients

Many fall prevention strategies call for patients to change their behaviors by:
- Attending a fall prevention program
- Doing prescribed exercises at home
- Changing their home environment

We know that behavior change is difficult. Traditional advice and patient education often does not work.

The Stages of Change model is used to assess an individual's readiness to act on a new, healthier behavior. Research on the change process depicts patients as always being in one of five "Stages" of change.

Behavior change is seen as a dynamic process involving both cognition and behavior that moves a patient from being uninterested, unsure or unwilling to initiate a change (precontemplation) to considering it (contemplation) to deciding and preparing to initiate a change (preparation) to changing behavior (action) then maintaining the new behavior for at least 6 months (maintenance).

The Stages of Change model has been validated and applied to a variety of behaviors including:
- Exercise behavior
- Cessation of use
- Smoking cessation
- Dietary behavior

Stages of Change model

<table>
<thead>
<tr>
<th>Stage of change</th>
<th>Patient cognition and behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>Does not think about change, is resigned or fatalistic. Does not balance in or downplay personal susceptibility</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Weighs benefits vs. costs of proposed behavior change</td>
</tr>
<tr>
<td>Preparation</td>
<td>Experiments with small changes</td>
</tr>
<tr>
<td>Action</td>
<td>Takes definitive action to change</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintains new behavior over time</td>
</tr>
</tbody>
</table>


Examples of Conversations about Fall Prevention

When talking with a patient, applying the Stages of Change model can help you match your advice about fall prevention to your patient’s stage of readiness.

The following sections give examples of patient-provider exchanges for each of the first four stages and offer possible responses to help move the patient from one stage to another. The maintenance stage is not included because older adults are most often in the early stages of behavior change for fall prevention.

<table>
<thead>
<tr>
<th>Precontemplation stage</th>
<th>Patient says:</th>
<th>Provider says:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient doesn’t view him or herself as being at risk of falling.</td>
<td>Falls just happen when you get old.</td>
<td>It’s true that falling is very common. About a third of all seniors fall each year. But you don’t have to fall. There are specific things you can do to reduce your chances of falling.</td>
</tr>
<tr>
<td>Goal: The patient will begin thinking about change.</td>
<td>I just slipped. That could have happened to anybody.</td>
<td>As we age, falls are more likely for many reasons, including changes in our balance and how we walk.</td>
</tr>
<tr>
<td>To move the patient to the contemplation stage, provide information and explain the reasons for making changes.</td>
<td>My 92 year old mother is the one I’m worried about, not myself.</td>
<td>Taking steps to prevent yourself from falling sooner rather than later can help you stay independent.</td>
</tr>
<tr>
<td></td>
<td>It was an accident. It won’t happen again because I’m being more careful.</td>
<td>Being careful is always a good idea but it’s usually not enough to keep you from falling. There are many things that you can do to reduce your risk of falling.</td>
</tr>
<tr>
<td></td>
<td>I took a Tai Chi class but it was too hard to remember the forms.</td>
<td>Maybe you’d enjoy taking a balance class instead.</td>
</tr>
</tbody>
</table>
Gait & Balance Assessment Tools

The 30-Second Chair Test
Purpose: To test leg strength and endurance
Equipment: A chair with a straight back, with or without armrests

Instructions to the patient:
1. Sit on the middle of the chair.
2. Place your hands on the arms of the chair and your feet flat on the floor.
3. Keep your feet flat on the floor, your back straight, and your head up.
4. Sit for 30 seconds.
5. Stand up quickly.
6. Repeat this for 30 seconds.

The 4-Stage Balance Test
Purpose: To assess static balance
Equipment: A stopwatch

Instructions to the patient:
1. Sit on the middle of the chair.
2. Place your hands on the arms of the chair and your feet flat on the floor.
3. Stand up quickly.
4. Stand on one foot for 10 seconds.
5. Switch feet.
6. Stand on both feet for 10 seconds.
7. Repeat steps 4-6.

The Timed Up and Go (TUG) Test
Purpose: To assess mobility
Equipment: A stopwatch

Instructions to 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.

On the word "Go" begin timing.
Stop timing after patient has sat back down and record.

Time: ___ seconds

An older adult age <80 who takes >12 seconds or age 80+ who takes >15 seconds to complete the TUG is at high risk for falling.

Circled all that apply: Slow, tentative pace  Loss of balance  Short strides  Little or no arm swing  Steadying self on wall  Stumbling  On bloc turning  Not using assistive device properly

Notes:

For relevant articles, go to: www.cdc.gov/injury/STEADI
Instructions for 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 systolic blood pressure of ≥20 mm Hg, or in diastolic blood pressure of ≥10 mm Hg, or experiencing lightheadedness or dizziness is considered abnormal.

<table>
<thead>
<tr>
<th>Position</th>
<th>Time (Minutes)</th>
<th>BP</th>
<th>Associated Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lying Down</td>
<td>5</td>
<td>BP / /</td>
<td>HR / /</td>
</tr>
<tr>
<td>Standing</td>
<td>1</td>
<td>BP / /</td>
<td>HR / /</td>
</tr>
<tr>
<td>Standing</td>
<td>3</td>
<td>BP / /</td>
<td>HR / /</td>
</tr>
</tbody>
</table>

For relevant articles, go to: www.cdc.gov/injury/STEADI
**Summary of patient’s fall risk factors**

### Fall Risk Checklist

<table>
<thead>
<tr>
<th>Patient:</th>
<th>Date:</th>
<th>Time:</th>
<th>AM/PM</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Fall Risk Factor Identified</th>
<th>Factor Present?</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>History</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any falls in past year?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
<tr>
<td>Worries about falling or feels unsteady when standing or walking?</td>
<td>☐ Yes ☐ No</td>
<td></td>
</tr>
</tbody>
</table>

| Medical Conditions                                |                 |       |
| Problems with heart rate and/or rhythm            | ☐ Yes ☐ No      |       |
| Cognitive impairment                              | ☐ Yes ☐ No      |       |
| Incontinence                                      | ☐ Yes ☐ No      |       |
| Depression                                        | ☐ Yes ☐ No      |       |
| Foot problems                                     | ☐ Yes ☐ No      |       |
| Other medical conditions (Specify)                | ☐ Yes ☐ No      |       |

| Medications                                       |                 |       |
| Any psychoactive medications, medications with anticholinergic side effects, and/or sedating OTCs (e.g., Benadryl, Tylenol PM) | ☐ Yes ☐ No |       |

| Gait, Balance & Strength                          |                 |       |
| Timed Up and Go (TUG) Test >14 seconds            | ☐ Yes ☐ No      |       |
| 4-Stage Balance Test Full tandem stance <10 seconds | ☐ Yes ☐ No |       |
| 30-Second Chair Stand Test Below average score (See table on back) | ☐ Yes ☐ No |       |

| Vision                                            |                 |       |
| Acuity <20/40 OR no eye exam in >1 year           | ☐ Yes ☐ No      |       |

| Postural Hypotension                              |                 |       |
| A decrease in systolic BP ≤20 mm Hg or a diastolic BP ≤10 mm Hg or lightheadedness or dizziness from lying to standing? | ☐ Yes ☐ No |       |

| Other Risk Factors (Specify)                      |                 |       |
| ☐ Yes ☐ No                                        |                 |       |
| ☐ Yes ☐ No                                        |                 |       |
Referral Forms

Specialists

Fall Prevention Patient Referral Form

<table>
<thead>
<tr>
<th>Healthcare Provider Organization</th>
<th>Street</th>
<th>City, State, Zip</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Patient:</th>
<th>Referred to:</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Sex:</th>
<th>DOB</th>
</tr>
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<tbody>
<tr>
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</table>

<table>
<thead>
<tr>
<th>Address:</th>
<th>Address:</th>
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</table>

<table>
<thead>
<tr>
<th>Phone:</th>
<th>Phone:</th>
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<tbody>
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<table>
<thead>
<tr>
<th>Email:</th>
<th>Email:</th>
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</thead>
<tbody>
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<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Type of Referral**
Type of specialist (See back of form):
Exercise or fall prevention program (See nurse for options):

**Reason for Referral**
- Gait or mobility problems: Medication review & consultation
- Balance difficulties: Inadequate or improper footwear
- Lower body weakness: Foot abnormalities
- Postural hypotension: Vision <20/40 in R, L, Both
- Suspected neurological condition (e.g., Parkinson's disease, dementia): Home safety evaluation
- Other reason: |

<table>
<thead>
<tr>
<th>Other relevant information:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Referrer signature:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

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Fall Prevention Programs

Recommended Fall Prevention Programs

<table>
<thead>
<tr>
<th>Programs</th>
<th>Location</th>
<th>Day &amp; Time</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
Research shows that to reduce falls, exercises MUST focus on improving balance and strength, be progressive (get more challenging over time) and be practiced for at least 50 hours. This means, for example, taking a 1-hour class 3 times a week for 4 months, or a 1-hour class 2 times a week for 6 months.

The National Institute on Aging has created an exercise guide for healthy older adults to use at home. You can order this free book by going to: www.nia.nih.gov/HealthInformation/Publications/ExerciseGuide.
Tri-fold Pocket Guide
### Integrating Fall Prevention into Practice

<table>
<thead>
<tr>
<th>Assessments and/or Identifiers</th>
<th>Identifies who in your practice can do this</th>
<th>What it involves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen all older patients for falls</td>
<td>Have each patient complete the Steep Independent Fall Risk Screen if necessary.</td>
<td></td>
</tr>
<tr>
<td>Identify modifiable fall risk factors</td>
<td>Review Steep Independent Fall Risk Screen and take a falls history.</td>
<td></td>
</tr>
<tr>
<td>Assess gait, balance &amp; lower body strength</td>
<td>• Administer one or more gait &amp; balance tests: Timed Up &amp; Go Test (Recommended) • Observe patient’s postural stability, gait, stride length &amp; sway a 6-Foot Walk Test (Optional) • Ask additional questions to assess critical risk factors.</td>
<td></td>
</tr>
<tr>
<td>Address identified deficits</td>
<td>As needed, refer to physical therapist or recommended community exercise or fall prevention program.</td>
<td></td>
</tr>
</tbody>
</table>

#### Conduct focused physical exam

- Address modifiable and/or treatable risk factors

- In addition to a customary medical exam:
  - Assess cognitive functioning
  - Screen for cognitive impairment and depression
  - Exercise feet & evaluate footwear
  - Look for structural abnormalities, arthritis, sensation & proprioception

- If necessary, refer to podiatrist or physical therapist.

- These specialists can identify & treat fall problems & can prescribe corrective footwear & orthotics.

#### Assess & manage postural hypotension

- Check supine & standing blood pressure using 7-point protocol on measuring arm that is up.
- Monitor medication changes to reduce hypotension.
- Monitor patient’s height and weight.
- Prevent patient with counseling & the brochures, Pacifica’s Hypotension, What it is, and how to manage it.

#### Review & manage medications

- Taper & stop psychotropic medications if there are no clear indications, try to reduce doses of necessary psychotropic medications.
- Monitor changes to reduce psychotropic medications.
- Monitor patient’s height and weight.
- Reduce medication if necessary.

### Increase vitamin D

- Administer at least 800 IU vitamin D supplement.

#### Assess visual acuity & optimize vision

- Administer visual acuity test.
- Refer to ophthalmologists or optometrists.

#### Address home safety & how to reduce fall hazards

- Contact about reducing fall hazards. Give CDC brochure, Check for Safety.
- Refer to OT to assess safety & patient’s ability to function in the home.

#### Educate about what causes falls & how to prevent them

- Provide education about fall prevention strategies.
- Give CDC brochure, What YOU Can Do to Prevent Falls.
- Recommend exercise or community fall prevention program.

#### Identify community exercise & fall prevention programs

- Contact senior service providers & community organizations that provide exercise & fall prevention programs for seniors.
- Compile a resource list of available programs.
Patient Educational Materials
Patient Brochures

- Postural Hypotension
  - What it is and how to manage it

- What YOU Can Do
  - To Prevent Falls

- Check for Safety
  - A Home Fall Prevention Checklist for Older Adults

Centers for Disease Control and Prevention
National Center for Injury Prevention and Control
Chair Rise Exercise

**What it does:** Strengthens the muscles in your thighs & buttocks.

**Goal:** To do this exercise without using your hands as you become stronger.

**How to do it:**

1. Sit toward the front of a sturdy chair with your knees bent & feet flat on the floor, shoulder-width apart.
2. Rest your hands lightly on the seat on either side of you, keeping your back & neck straight & chest slightly forward.
3. Breathe in slowly. Lean forward & feel your weight on the front of your feet.
4. Breathe out & slowly stand up, using your hands as little as possible.
5. Pause for a full breath in & out.
6. Breathe in as you slowly sit down. Do not let yourself collapse back down into the chair. Rather, control your lowering as much as possible.
7. Breathe out.

Repeat 10–15 times. If this number is too hard for you when you first start practicing this exercise, begin with fewer & work up to this number.

Rest for a minute & then do a final set of 10–15.
Use **STEADI** to Link Clinical Practice with Community Programs

Change clinical practice

Community fall prevention or exercise programs
More Information

• All STEADI Tool Kit materials are available to view, download & print on the CDC STEADI website:

www.cdc.gov/injury/STEADI
STEADI – Fall Prevention
Clinician Engagement & Education Session

Richard J Schuster, MD, MMM, FACP
University of Georgia

DISCLAIMER: This is a draft document and the information is being shared solely for the purpose of pre-dissemination review. It has not been formally disseminated or approved by the Centers for Disease Control and Prevention/Division of Unintentional Injury Prevention. It does not represent and should not be construed to represent any agency determination or policy.
Falls are Common in Older Individuals

• 1/3 of Medicare patients fall each year;
  • How many tell their doctor?
  • How many are afraid to tell the doctor?

Hornbrook, 1994 and Hausdorff, 2001
Falls can be Prevented

**Biological**
- Leg weakness
- Mobility problems

- **Vitamin D Supplementation**
  Age 65+: 800-1,000 units/day
  Men & Women at Risk
- **Exercise**
- **Physical Therapy**

AGS/BGS, 2010
Get Clinicians to Commit to Changing Their Practice

• Actively decide to change the approach to falls prevention
• Plan to adopt some or all of the STEADI Tool Kit
• Identify a group champion and have them recruit their partners
STEADI Tool Kit: A Few Key Things
Key Features for Fall Prevention in Clinical Practice

1. Simple screening annually age ≥ 65
2. Ask
   A. 2 or more falls
   B. 1 fall
      i. With injury
      ii. Combined with gait or balance problems
3. Gait or balance problems
4. Present with acute fall
5. Simple Timed Up & Go (TUG) Screening Test
6. Patient Self-Risk Assessment

USPSTF, 2012
Patient Self-Risk Assessment

Stay Independent
Falls are the main reason why older people lose their independence.

Are you at risk?

Check Your Risk for Falling

<table>
<thead>
<tr>
<th>Please circle “Yes” or “No” for each statement below.</th>
<th>Why it matters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes (2) No (0) 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) No (0) 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) No (0) 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) No (0) 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) No (0) I am worried about falling.</td>
<td>People who are worried about falling are more likely to fall.</td>
</tr>
<tr>
<td>Yes (1) No (0) 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) No (0) 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) No (0) 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) No (0) 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) No (0) 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) No (0) 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) No (0) 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.

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.
The Timed Up and Go (TUG) Test

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.

Instructions to 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

On the word “Go” begin timing.
Stop timing after patient has sat back down and record.

Time: _______ seconds

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

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

Notes:

For relevant articles, go to: www.cdc.gov/injury/STEADI
Talking about Fall Prevention with Your Patients

Many fall prevention strategies call for patients to change their behaviors by:

- Attending a fall prevention program
- Doing prescribed exercises at home
- Changing their home environment

We know that behavior change is difficult. Traditional advice and patient education often does not work.

The Stages of Change model is used to assess an individual's readiness to act on a new, healthier behavior. Research on the change process depicts patients as always being in one of the five "stages" of change.

Behavior change is seen as a dynamic process involving both cognition and behavior, that moves a patient from being uninterested, unaware, or unwilling to make a change (precontemplation); to considering a change (contemplation); to deciding and preparing to make a change (preparation); to changing behavior in the short term (action); and to continuing the new behavior for at least 6 months (maintenance).

The Stages of Change model has been validated and applied to a variety of behaviors including:

- Exercise behavior
- Smoking cessation
- Contraceptive use
- Dietary behavior

<table>
<thead>
<tr>
<th>Stage of change</th>
<th>Patient cognition and behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>Does not think about change, is resigned or fatalistic</td>
</tr>
<tr>
<td></td>
<td>Does not believe in or downplays personal susceptibility</td>
</tr>
<tr>
<td>Contemplation</td>
<td>Weighs benefits vs. costs of proposed behavior change</td>
</tr>
<tr>
<td>Preparation</td>
<td>Experiments with small changes</td>
</tr>
<tr>
<td>Action</td>
<td>Takes definitive action to change</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Maintains new behavior over time</td>
</tr>
</tbody>
</table>

Summary of patient’s fall risk factors
Make a Systems Innovation in the Clinical Practice
Steps to STEADI Implementation

- Engage the staff
- Change practice regarding falls
- Measure clinical outcomes
  - At baseline before you start making changes
  - Periodically afterwards
    - 6 months
    - 12 months
    - 36 months
    - 48 months

Some groups are “natural” doing this, to others it’s foreign

It’s important to demonstrate a SUSTAINED effect
STEADI Implementation

• Things to emphasize
  – Assess risk
  – Develop a Plan of Care for falls prevention
  – Provide referral to community programs to reduce falls
    • Exercise programs (tai chi)
    • Physical therapy programs
STEADI Implementation

- Make a **microsystem change** to the group practice to incorporate STEADI into the practice of medicine
Examples of How to Change a Practice

- Include fall risk assessment routinely in Medicare annual wellness visit
- Ask every older patient if they fell in the last 12 months
- Adapt electronic medical record (EMR) to record fall risk factors
- Self-Risk Assessment tool ("Stay Independent" brochure)
  - Put in waiting room
  - Provider hands out to each older patient
- Assign new roles for health care team members
Encourage the group to commit to a systems innovation within a couple of weeks of the clinical session.
STEADI Implementation

- Clinician measures outcomes in older patients following falls risk assessment and treatment
STEADI Implementation

Features of the systems innovation (measure, re-measure, and new innovation) are key to the Quality Improvement Process\(^1,2\), often called the:

- **Plan, Do, Check, Act (PDCA)**
- **Plan, Do, Study, Act (PDSA)**

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1. Crossing the Quality Chasm
2. Nash
Consider engaging the whole group in this process
STEADI Implementation

• Champion conducts Clinician Engagement and Education Session (CEES)
  – Engage clinicians
  – Educate clinicians
  – Introduce STEADI Tool Kit
  – Change practice regarding falls
  – Measure clinical outcomes
  – Follow-up periodically
STEADI Implementation

• Champion conducts Clinician Engagement and Education Session (CEES)
  – Educate clinicians
    • Prevalence, morbidity & mortality of falls
    • In office approaches to identify falls risk
    • Financial advantages to practice in implementing this program
    • Developing a Plan of Care in falls prevention
    • Referral to community programs to reduce falls
STEADI Implementation

• Champion helps the group to identify microsystem changes they can make in order to incorporate STEADI into their practice
STEADI Implementation

- Group measures outcomes in older patients following fall risk assessment & treatment
Measurement
Use the EMR to Measure Outcomes

- Can you identify patients to assess?
- Are you doing a falls risk assessment?
- Are you reviewing medical causes of falls – such as psychoactive medication use?
- Are you prescribing Vitamin D?
- Are you referring your patients to community services?
Centers for Medicare & Medicaid Services
Physician Quality Reporting System (PQRS)

• **Falls: Risk Assessment** (CPT 2 Code 3288F) [PQRS #154]
  – Falls occurring?
    • No or 1 fall without injury: (Code 1101F)
    • Yes*: 2 or more / 1 fall with injury (Code 1100F)

  * If Yes, you need to document that you have done a Falls Risk Assessment.
    – Work with your group and EMR vendor on details of that documentation
    – The CME – PQRS program may have specific expectations for this documentation; they may vary by region / CMS intermediary
• **Falls: Plan of Care** * (CPT 2 Code 0518F) [PQRS #155]
  
  – Referral
    • PT / OT
    • Medical specialist
    • Community physical activity program
    • Home safety evaluation
  
  – Evaluate need for assistive device

* You need to document that you have done a Falls Risk Assessment.
  
  • Work with your group and EMR vendor on details of that documentation
  
  • The CME – PQRS program may have specific expectations for this documentation; they may vary by region / CMS intermediary
Advantages of incorporating falls prevention into a practice
• **Financial**
  – Meaningful Use
  – PQRS – Medicare
  – CMS Annual Wellness Visit
  – Advantage to ACO’s and other insurers

• **Clinical**
  – Improved efficiency of care
  – Improved outcomes

• **Professional**
  – CDC CME Program being developed
  – Potential use for Board Recertification (ABIM / ABFM)
  – Demonstrate Leadership in a Community Wide Effort
STEADI – Fall Prevention Clinician Engagement & Education Session

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Questions?

• **Moderator:** Cameron McNamee, MPP

• **Presenter:** Judy A. Stevens, PhD

• **Presenter:** Richard J. Schuster, MD, MMM, FACP