Janet Popp, PT, MS  
Chair, NM Adult Falls Prevention Coalition  
Adjunct Faculty, UNM Division of Physical Therapy  
Balance for Life  
janetpopp1@gmail.com

Learning Objectives

- Apply effective communication strategies to discuss the issue of falls with older adults.
- Identify fall risk factors and perform 3 strength and balance tests to screen for fall risk.
- Implement resources from the CDC STEADI Toolkit to engage older adults in fall risk reduction.
- Understand possible fall risk reduction referrals to other healthcare professionals and evidence based community programming.

Fall Risk Screening: Utilizing the CDC STEADI Fall Prevention Toolkit

Fall-related Injury Death Rate Among Older Adults, New Mexico and United States, 1990-2015

Falls in New Mexico

  - 3rd leading cause of injury-related death for all ages (behind poisoning, motor vehicle accidents)
  - Leading cause of injury-related hospitalization, ED visit, and death for adults 65+
- NM Behavioral Risk Factor Surveillance System
  - 2012 Survey: 32% (89,000) adults 65+ report 1 fall in previous 12 months
  - Among fallers: 39.9% (35,400) required some form of medical attention
  - 2014 Survey: Vision difficulties: Respondents were asked, “Are you blind or do you have serious difficulty seeing, even when wearing glasses?”; “In the past 12 months, how many times have you fallen?”
  - 50% of respondents from NM, 65+ report a fall…

Source: NM Department of Health, NM-IBIS
Discharge status of fall-related hospitalization, 65+, 2011-2013

- SNF/ICF: 45.6%
- Rehab/Longterm Care: 21%
- Home: 15.3%
- Home Health Care: 9.4%
- Hospice: 3.4%
- Expired: 2.5%
- Short term general hospital: 1.9%
- Other: 1%

Source: NM Department of Health

Hip Fractures

- Annually 250,000+ older people are hospitalized for hip fractures.
- More than 95% of hip fractures are caused by falling.
- Post operative mortality: 30 day (4.3%), 4 month (11.4%), 1 year (18.8%).
- Post operative complications: In-hospital (29.4%), 4 month (18.6%), 1 year (6.7%).
- One year mortality rate by age: <80 (12.5%) vs. >80 (24.7%); p <0.001.

Public messaging

Some reasons older adults do NOT acknowledge falls:

- Negative stereotyping
- Beliefs that falls are an inevitable and unavoidable consequence of aging
- Embarrassment about loss of control

Older people value strength and balance training for their potential to:

- Maintain functional capabilities and thus avoid disability and dependence
- Enhance general health, mobility and appearance
- Be interesting, enjoyable and sociable

What Is a Fall?

CDC definition:
A person descends abruptly due to the force of gravity and strikes a surface at the same or lower level.
Public Messaging: NCOA Falls Free Initiative
- Do not use fear-based messaging
  - More likely to be alienating
- Stress maintaining independence
- Avoid using the term “exercise” in messaging
- Older adults respond more positively to “moving” or “physical activity”
- Make falls prevention tips easy, fun, doable, and inexpensive

Talking to your patients
- This 4-page document helps healthcare providers speak with their patients about behavioral changes.
- Describes the Stages of Change model
- Examples of conversations

Talking about fall prevention with your patients

<table>
<thead>
<tr>
<th>Stages of Change model</th>
<th>Patient cognition and behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage of change</td>
<td></td>
</tr>
<tr>
<td>Precontemplation</td>
<td>Does not think about change, is resigned or fatalistic</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>


Precontemplation
- Patient does not recognize fall risk.
- Goal: patient will begin to think about change

Patient says:
- Falls just happen when you get old.

Response:
- It’s true that falling happens more often as you get older but many falls can be prevented. There are specific things you can do to reduce your chances of falling.
Contemplation

- Patient is considering the possibility of elevated fall risk.

Goal: Patient will consider the benefits and barriers to change.

Patient says:
- I’d like to exercise but I don’t because I’m afraid I’ll get too tired.

Response:
- You can reduce your chances of falling by doing strength and balance ex as little as 3 times a wk. You don’t have to overexert yourself to benefit. You could attend an ex class or think about going to a PT.

Patient says:
- I don’t want to ask my daughter for a ride.
- Getting to the senior center is hard since I don’t drive.
- I have to take care of my husband. I don’t have time.

Response:
- There are several simple exercises you can do to prevent falling.
- They don’t take a lot of time and you don’t have to rely on other people.
- A PT can teach you the exercises and you can do them at home.

Preparation

- Patient recognizes fall risk and is thinking about doing something about it.

Goal: Patient will begin to consider specific changes.

Patient says:
- I’m worried about falling. What can I do?

Response:
- Let’s look at some factors that increase your risk for falling and talk about what you can do about one or two of them.

Action Stage

- Patient recognizes fall risk and is ready to do something about it.

Goal: Patient will take definite action to change.

Patient says:
- I know a fall can be serious. What can I do to prevent a fall?

Response:
- Let’s look at your medications.
- I’m am going to fill out a referral for a _____(specialist) who can help you______
- I will contact your primary care provider....
Key points for effective communication

***Emphasize maintaining independence***

Older adults are usually less responsive to “scare strategies” such as reviewing serious health consequences of falls, expressing concern for one’s safety.

Postural Control

Fall Risk Factors

- Intrinsic vs. extrinsic
- Patient perspective vs. healthcare professional perspective

Fall Risk Factors: Intrinsic

- Advanced age
- Previous falls
- Muscle weakness
- Gait and balance problems
- Low vision
- Postural hypotension
- Chronic conditions: arthritis, diabetes, stroke, PD, incontinence, dementia/Mild Cognitive Impairment
- Fear of Falling
Fall Risk Factors: Extrinsic

- Lack of stair handrails
- Lack of bathroom grab bars
- Dim lighting or glare
- Improper use of assistive device
- Multifocal glasses
  - Multifocal glasses wearers >2x more likely to fall in the follow-up period than non-multifocal glasses wearers.
  - Multifocal glasses impair depth perception and edge-contrast sensitivity at critical distances for detecting obstacles (i.e. curbs)

Haran 2010; Lord 2002

Fall Risk Factors: Medications

- Psychoactive medications
  - Anticonvulsants
  - Antidepressants
  - Antipsychotics
  - Benzodiazepines
  - Opioids
  - Sedatives-hypnotics
- Review prescriptions, OTC, herbal supplements which can cause dizziness, sedation, confusion, blurred vision, orthostatic hypotension
  - Anticholinergics
  - Antihistamines
  - Medications affecting BP
  - Muscle Relaxants
- Sedating OTCs (Tylenol PM, Benadryl)

Resources to help with med review

STEADI: The Pharmacist's Role in Older Adult Fall Prevention
- JCPP's Pharmacists' Patient Care Process; www.pharmacist.com/sites/default/files/files/PatientCareProcess.pdf
- APhA MTM Central; www.pharmacist.com/mtm

Resources: Minimize high risk meds in older adults

- Deprescribing Algorithms; www.deprescribing.org/
- Resources to improve sleep; www.cdc.gov/sleep/about_sleep/index.html
**Vitamin D and Fall Prevention**

- Target blood level for 25-hydroxy vitamin D [25(OH)D] target: 30 ng/mL
- Serum concentrations <30 associated with balance problems, impaired LE function, higher fall rates, muscle weakness
- Effective fall prevention intervention: CDC Falls Compendium
- Daily supplementation
  - CDC: At least 800-2000 IU is safe without testing
  - AGS: up to 4000 IU of vitamin D is safe and nontoxic and ensures 90% of older adults reach the 30 ng/mL target
  - Consider conditions which can result in hypercalcemia: Osteoporosis, Kidney Stones, Advanced Renal Disease, Sarcoidosis

AGS 2011; Annweiler 2010; Kalyani 2010; Phelan 2015

**Practice Settings for Fall Prevention**

- Ambulatory Care
  - assess medications in medical record
  - collaborate with providers
- Community
  - observe patients in the pharmacy…trouble standing up or unsteady walking to counter
  - ask questions, review meds, provide update to provider
- Transitions of Care
  - discharge from hospital; follow up with PCP re risks (admission for fall, BP issue)

**CDC Screening for Fall Risk: Key Questions**

- Have you had a fall in the past year?
- If so, how many times? Were you injured?
- Do you feel unsteady when standing or walking?
- Do you worry about falling?

- No to all key questions: Low Risk, Educate patient, Vitamin D/calcium, Refer for community strength and balance exercise program

**If yes to any key question**

- Evaluate gait, strength, and balance
  - Timed Up and Go
  - 30 Second Chair Stand
  - 4 Stage Balance Test

- If tests within normal range, then
  - Low Risk (Education, Vitamin D/Calcium, Community Programming
  - Consider medication review
If yes to any key questions and problem noted during strength/balance testing...

- Gait, strength or balance problem
  - > 2 falls
  - 1 fall
  - 0 falls
  - Injury
  - No injury

MODERATE RISK
Individualized fall interventions
- Educate patient
- Review & modify medications
- Vitamin D +/- calcium
- Refer to PT to improve gait, strength & balance
- or refer to a community fall prevention program

HIGH RISK
Individualized fall interventions
- Educate patient
- Vitamin D +/- calcium
- Refer to PT to enhance functional mobility & improve strength & balance
- Manage & monitor hypertension
- Modify 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

Conduct multifactorial risk assessment
- Review Stay Independent brochure
- Falls history
- Physical exam including:
  - Postural dizziness/postural hypotension
  - Medication review
  - Cognitive screen
  - Feet & footwear
  - Use of mobility aids
  - Visual acuity check

CDC recommends focus first on
- Lower body weakness
- Gait and balance difficulties
- Use of psychoactive medications
- Postural dizziness/lightheadedness
- Poor vision
- Problems with feet and/or shoes
- Home hazards

SAFE Medication Review Framework

**S**
Screen for medications that may increase fall risk.

**A**
Assess the patient to best manage health conditions.

**F**
Formulate the patient’s medication action plan.

**E**
Educate the patient and caregiver about medication changes and fall prevention strategies.


Who is STEADI for?
- Stop Elderly Accidents, Deaths, and Injuries
- Developed by CDC for PCP, health professionals and anyone serving older adults
- STEADI developed for community based older adults
- Not intended for institutionalized residents
- Appropriate for hospitalized patients during DC to home

To Live 10,000 Years Project by Danny Goldfield
Contents of STEADI

- Provider Resources
  - Fact Sheets
- Training Materials
  - Case Studies
  - Communication Strategies
  - Assessment Tools
- Patient Resources
- Google: cdc steadi

Stay Independent

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

Are you at risk?

Strength and Balance Tests: one minute training videos

- Strength and Balance Tests: one minute training videos

Strength and Balance Tests: Timed Up and Go (TUG)

- TUG associated with history of falls but predictive ability limited by population
- Chair with armrests and a seating height of 44-47 cm should be used
- Comfortable walking speed…not a race.
- CDC cut score: 12 seconds for elevated risk
- Indicator of ADL difficulty: > 30 seconds
- >24 sec. predicts fall within 6 months after hip fx

Bohannon 2006; Schoene 2013; Shumway-Cook 2000; Kristensen 2007; Podsiadlo D and Richardson 1991
www.RehabMeasures.org
**Strength and Balance Tests: 30**

**Second Chair Stand**

**Chair Stand—Below Average Scores**

<table>
<thead>
<tr>
<th>Age</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-64</td>
<td>&lt; 14</td>
<td>&lt; 12</td>
</tr>
<tr>
<td>65-69</td>
<td>&lt; 12</td>
<td>&lt; 11</td>
</tr>
<tr>
<td>70-74</td>
<td>&lt; 12</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>75-79</td>
<td>&lt; 11</td>
<td>&lt; 10</td>
</tr>
<tr>
<td>80-84</td>
<td>&lt; 10</td>
<td>&lt; 9</td>
</tr>
<tr>
<td>85-89</td>
<td>&lt; 8</td>
<td>&lt; 8</td>
</tr>
<tr>
<td>90-94</td>
<td>&lt; 7</td>
<td>&lt; 4</td>
</tr>
</tbody>
</table>

Elevated risk if tandem <10 sec. (CDC)

Unable to single leg stand at least 5 seconds predicts second fall within 6 months.

**Orthostatic Hypotension**

- Checking OH routinely in all older adults is critical and often overlooked.
- OH is defined as > 20 mmHG drop in systolic Bp or > 10 mmHG drop in diastolic
- Does the patient report falling back into chair during sit to stand?

**Fall Risk Checklist**

- This checklist is intended to “put it all together”
- Provides a summary of fall risk
- Useful tool to encourage older person to talk to family and/or healthcare provider
- Good tool for health fairs
**Patient Education Resources:** English, Spanish, Chinese

- What YOU Can Do to Prevent Falls
- Check for Safety
- Postural hypotension: What it is & how to manage it

NM Adult Falls Prevention Coalition
www.nmstopfalls.org

**Fall Risk Screening and intervention:** Down and dirty method

- Stay Independent Brochure: self-assess for fall risk
  - Screening questions: Fall in past year, unsteady balance/walking, concern about falling
- Perform (or have support staff perform) strength and balance tests: Timed Up and Go, 30 Second Chair Stand (optional), 4 Stage Balance Test (optional)
- Medication Review
- Assess for Postural Hypotension
- Vitamin D supplementation
- Patient Education Brochures

**Community Fall Prevention Programs**

- A Matter of Balance
- Tai Chi Moving for Better Balance
- Otago Exercise Program
- Enhance Fitness: shown to modify fall risk factors

**A Matter of Balance**

- 8 weeks, 2 hour session, once a week
- Cognitive behavioral program designed to reduce fear of falling, increase activity levels, and increase confidence in avoiding falls
- Target adults 60+ who report concern/fear of falling
- Group discussions about physical, social, and cognitive factors affecting fear of falling
- 15-20 minutes of gentle exercise

**Evidence:**

- 12 months after the program, participants report:
  - ↓ activity restriction
  - ↓ fear of falling
  - ↑ functional mobility

- Control group reported opposite trends
Tai Chi Moving for Better Balance

- 8 form Tai Chi program
- 12 week program, 1 hour sessions, 2 x/week
- Participants report:
  - ↑ physical function and balance
  - ↑ mental well-being
  - ↑ self-confidence/independence in daily activity
  - ↑ overall health
- **Evidence:** Incidence of falls reduced **55%**
- Fear of falling reduced 50%

Otago Exercise Program

- Home-based or Outpatient setting, individualized, progressive balance and strength exercise program
- Includes a progressive walking program 2x/wk
- Conducted by physical therapist/physical therapy assistant
- Minimum of 5 visits over 8 weeks and follow up visit at 6 months
- CDC developed reimbursement protocol for Medicare Part A/B
- **Evidence:** Falls reduced 35% for adults 80+

EnhanceFitness

- Group exercise program, 1 hour, 3 times per week
- Multi-component class including strength, cardiovascular endurance, posture and flexibility, and balance exercises
- Fall risk education/assessment, home modification
- Target population: Older adults
- **Evidence**
  - 26% improvement in balance and coordination
  - 18% improvement in endurance
  - 33% improvement in general health on the SF-36: physical component summary (PCS-12)
- Incidence of falls lower in intervention group (but not stat significant)

Linking Patients to Community Resources

- Aging and Disability Resource Center (ADRC)
  - [http://www.nmaging.state.nm.us/Services.aspx](http://www.nmaging.state.nm.us/Services.aspx)
  - 800-432-2080, TTY 505-476-4937
### Linking Patients to Community Resources: Paths to Health New Mexico

- New centralized database and referral system for evidence based community programming
- Tentative launch: mid-July
- NMDOH contract awarded to Consortium for Older Adult Wellness to develop the database and manage referrals
  - Referral system will be HIPAA compliant (phone, fax, website and EHR link) and will accommodate healthcare provider and self-referrals
- Database
  - EB fall prevention classes
  - Instructors/trainers certified in various EB community programs
  - MyCD Program
  - Diabetes Prevention Program...and more.

### Tools to help implement fall prevention services

- CDC Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults, 3rd Edition.
  - [www.cdc.gov/homeandrecreationsafety/falls/compendium.html](http://www.cdc.gov/homeandrecreationsafety/falls/compendium.html)
- Collaborative Practice Agreements and Pharmacists’ Patient Care Services: A Resource for Pharmacists
- Billing for MTM Services: Tips for Pharmacists
- Creating Community-Clinical Linkages Between Community Pharmacists and Physicians (Coming Soon)
- Exercise & Physical Activity: Your Everyday Guide from the National Institute on Aging

### The pharmacist: an essential member of the fall prevention team

- All patients 65+ should be asked about falls at least annually
- Annual medication review including Vitamin D education, postural hypotension
- Encourage annual vision exam
- Refer appropriate patients to PT, OT, EB community programming
- STEADI resources make the process easier;
  - New free online training (with CPE) for Pharmacists
  - Developed in collaboration with CDC and the American Pharmacists Association

### National Fall Prevention Awareness Day, Friday, September 22

- NM Adult Falls Prevention Coalition and ABQ Meal Sites
- Los Duranes Community Center: Fall risk screenings
- National Council on Aging Falls Free Initiative
- Media resources
  - Janet Popp, PT, MS
  - Chair, NM Adult Falls Prevention Coalition
  - Adjunct Faculty, UNM Division of Physical Therapy
  - Balance for Life
  - janetpopp1@gmail.com

STEADI trainings sponsored by NMDOH, Office of Injury Prevention