Preventing Falls in Older Adults

Nancy Latham PhD PT
Siobhan McMahon PhD MPH GNP-BC
Fred Ko MD
Overview of the Webinar

1. Review of evidence - Nancy
2. STRIDE Trial Implementation - Siobhan
3. Clinical Tools for preventing falls - Fred
Session I:  
Background of Falls Older Adults: Review of the Evidence

Nancy Latham, PhD, PT
Brigham and Women’s Hospital
Boston, MA
Objectives

• To review the evidence of:
  – The scope of the problem of falls in older adults
  – Risk factors associated with falls and fall-related injuries
  – The effectiveness of interventions to prevent falls
Why Talk about Falls?

Falls among Adults Age 65 and Older are Common and Costly.

$50 Billion is spent on medical costs each year.

- 30M Falls
- 7M Injuries
- 3M ED Visits
- 900K Hospitalizations
- 30K Deaths

Source: CDC
Falls Prevention in Older Adults

Falls are a Frequent and Serious Problem for Older Adults

- One-quarter of older Americans fall each year. Of those who fall:
  - 20-30% have moderate to severe injuries (e.g., hip fractures, head trauma, lacerations)
- Leading cause of fatal and nonfatal injuries in older people
- Every 20 minutes, an older person in the US dies as the result of a fall
- Fewer than 50% of older people discuss their falls with their primary care provider
NEW CDC Data on Older Adult Falls

Age adjusted fall mortality among U.S. adults aged 75 years and older, 2000 - 2016.

Source: NCOA
### Causes of Falls Among Older Adults

- Falls may occur for a variety of reasons:
  - Intrinsic (e.g., poor balance, weakness, chronic illness, visual or cognitive impairment)
  - Extrinsic (e.g., polypharmacy)
  - Environmental (e.g., poor lighting, thick carpet)
- When falls occur, providers may become aware of additional acute illnesses (e.g., pneumonia, stroke, influenza)
Risk Factors for Falls

- Risk factors:
  - Prior falls*
  - Fear of falling
  - Number of chronic condition pain sites*
  - Parkinson’s disease*
  - Pain (any)*
  - Use of walking aid*
  - Gait deficit*
  - Vertigo
  - Anticonvulsants
  - Fall Risk Increasing Drugs (FRIDs)

* Risk more than doubled

Interventions to Reduce Risk of Falls

• Quality improvement strategies can take place at:
  – The **clinic level** (e.g., case management, registries, staff education, electronic health record reminders)
  – The **health system level** (e.g., positive or negative financial incentives for clinicians, changes in reimbursement)

• At the **individual level**:
  – Address risk factors based on the individual’s profile and preferences
Falls and Fall-Related Injuries can be Prevented

- Many meta-analyses and guidelines have concluded that falls can be prevented with appropriate interventions
- Fall prevention **exercise programs** that focus on strength and balance are appropriate for all older adults
- For older people at high-risk of falls, **multi-factorial assessment and management** where fall risk factors are identified and treated results in an absolute reduction of 0.53 falls per person per year (Hopewell et al, Cochrane Review, 2018)
## Individual-level Interventions to Reduce Risk of Falls

- For older adults at high risk of falling, a multifactorial approach is usually more effective than single interventions
  - Exercise is the only intervention that has been found to reduce injurious falls when used on its own (n=59 trials, Sherrington et al, Cochrane Review, 2019)
  - Fractures are reduced with combined osteoporosis treatment (e.g., bisphosphonates), calcium supplementation and vitamin D reduces the risk of fracture (Tricco et al, JAMA, 2017)

American Geriatrics Society and British Geriatrics Society Guidelines, JAGS, 2011
## Multi-Factorial Interventions to Reduce Risk of Falls

- Following assessment for fall risk factors, effective individual-level interventions to prevent injurious falls include:
  - Exercise to improve strength, gait and balance
  - Medical assessment and management
    - Manage postural hypotension
    - Manage heart rate and rhythm abnormalities
  - Assessment and treatment of vision problems
    - Encourage cataract surgery
    - Proper lens prescription, minimize bifocal use if possible
  - Manage foot and footwear problems
Interventions to Reduce Risk of Falls

- **Medication adjustment**
  - Remove or reduce psychotropic medication
  - Osteoporosis therapy and/or Vitamin D and Calcium supplements
- **Environmental modification**
  - Assess home hazards, remove or modify identified hazards, and install safety devices (e.g., handrails on stairs, grab bars on bathrooms, and improvements in lighting)
  - Referral to an Occupational Therapist when possible, especially for people with low vision
- **Education and self-management**
  - Education about fall risks and community resources
  - Self-management strategies and approaches such as collaborative goals setting and motivational interviewing to promote behavior change
Falls in SNFs or Long Term Care

- Older people in long term care fall at approximately twice the rate of community dwelling older adults
- Risk factors that were the strongest predictors:
  - previous falls
  - walking aid use
  - moderate disability (Deandrea et al, 2013)
- Reduction of environmental risk factors (e.g. poor lighting, slippery floors) important in these settings
- Cognitive impairment associated with increased risk of falls – restraints do not reduce fall risk
Falls and People with Dementia

- People with dementia at increased risk of falls and serious fall-related injuries in all settings
- Many of the same risk factors (e.g. previous falls)
- Unique risk factors include:
  - verbally disruptive and attention-seeking behavior
  - severity of dementia
  - visual perception
  - caregiver burden

E. Fernando et al, 2017
Section II:
The Strategies to Reduce Injuries and Develop Confidence in Elders (STRIDE) Study

Siobhan McMahon PhD, MPH, GNP-BC

University of Minnesota
School of Nursing
Outline

- STRIDE study
  - Research question
  - Design
- STRIDE intervention
  - Design
  - Organization and general processes
  - Procedures
  - Supports/ infrastructure
The Strategies to Reduce Injuries and Develop Confidence in Elders (STRIDE) Study

- **Principal Investigators:**
  - Shalender Bhasin (Brigham and Women’s Hospital)
  - Tom Gill (Yale)
  - David Reuben (University of California, Los Angeles)
- **Data Coordinating Center:** Yale
- **Interventionists:** Registered Nurses with skills and abilities in care coordination, case management, and care of older adults
- **Funders:** Patient-Centered Outcomes Research Institute (PCORI) and National Institute on Aging
The Research Question

- Can the systematic implementation of evidence-based fall prevention interventions into primary care practices reduce injurious falls?
# Study Design

- **Pragmatic Group Randomized Trial**
- **86 Primary Clinics Across 10 U.S. Health Systems (11 states)**
  - 5,451 individual participants
- **Enrollment criteria:**
  - **Clinic level**
    - Primary care
    - Not currently implementing multifactorial assessment and intervention strategies
  - **Individual level**
    - 70+ years old
    - One or more risk factors for falls
      - Fallen and hurt self in the past year
      - Fallen 2 or more times in the past year
      - Fear of falling because of balance or gait
- **Clinics (and the eligible individuals within each clinic) were randomized to one of two conditions:**
  - Falls Care Management (24 to 44 months with 1-4 clinic visits)
  - Enhanced fall prevention information (Providers and Patients)
Intervention Design

- Guided by
  - Chronic Care Model
  - The theory of Self-Management
  - Principles and spirit of Motivational Interviewing
  - Co-management concept
Chronic Care Model

- Build Healthy Public Policy
- Create Supportive Environments
- Strengthen Community Action
- Self-Management / Develop Personal Skills
- Delivery System Design / Re-orient Health Services
- Decision Support
- Information Systems
- Activated Community
- Informed Activated Patient
- Prepared Proactive Practice Team
- Prepared Proactive Community Partners

Productive Interactions and Relationships Population Health Outcomes / Functional and Clinical Outcomes
Self-management

- Definition: The day to day management of a health condition, including fall risk. Examples include:
  - Engage in fall risk-reducing activities
  - Interact with the healthcare system
  - Monitor self—status of risk
  - Make adjustments to plan as needed, over time
Self-management

Techniques used by RNs and Healthcare team to promote self-management:

- Individualized assessment
- Collaborative goal setting
- Enhancing skills
- Follow up and support
- Overcoming barriers in the healthcare system and elsewhere
- Access to community resources
Motivational Interviewing

- **Definition:** a method for approaching patients who are ambivalent about making a change. It has been shown to be more effective than traditional, “advice-giving” conversations (Rubak, Sandbaek, Lauritzen, & Christensen, 2005).

- **Rationale for use:** Reducing fall risk is dependent on behavior change in 1 or more domains (e.g., increase physical activity, remove hazards in the home)

- **Operationalization of MI in STRIDE:**
  - Training and practice focused on changes relevant to fall risk
    - Processes: Engaging, focusing, evoking and planning
    - Skills: Asking open ended questions, affirming, reflective listening, summarizing, informing and advising
Co-Management

- Two or more health care providers jointly managing an individual’s health care to achieve the best quality and outcomes
  - Physician specialist-physician generalist (e.g., oncologist-general internist)
  - Registered nurse- generalist (e.g., falls care manager-primary care provider)
- Evidence shows that a co-management model can double the rates of individuals receiving recommended assessments and care for falls


The Resulting Intervention for STRIDE: Falls Care Management

- **Content**
  - Evidence based falls prevention interventions that are individualized and person-centered

- **Organization**
  - Co-management of Fall risk in primary care by patient, RN-falls care manager (FCM), and primary provider
  - Led by FCM and clinic/system leaders, in collaboration with additional stakeholders in each clinic and healthcare system

- **Processes**
  - Engagement
  - Conduct and communicate fall risk
  - Evoke/Ellicit priorities
  - Inform and advise on evidence based information and related community resources
  - Co-create personalized care plan
  - Implement care plan
  - Follow up evaluation, care plan adjustment
    - Initial visit, and then annual and as needed
<table>
<thead>
<tr>
<th>Falls Care Management</th>
</tr>
</thead>
</table>

**Procedures**

- **Pre-visit**
  - Schedule initial visit in the patient’s primary clinic
  - Administer pre-visit questionnaire via mail to capture history of factors that contribute to fall risk
  - Call
Falls Care Management

Procedures continued

- **In-person visit**
  - Review the pre-visit questionnaire
  - Brief interview to clarify and/or expand on focused history
  - Physical exam
    - Vital signs and orthostatic BPs
    - Functional strength and balance (SPPB)
    - Blood pressure
    - Foot and footwear exam
    - Discuss how to get up after a fall
  - Finalize and inform patient of assessment results
  - Explore patient perspectives and elicit priorities (which risks are most important to them now)
    - Advise and discuss recommended interventions
      - Co-create falls reduction care plan
      - After-visit summary, including what to do in case of a fall
Falls Care Management

Procedures continued:

• **Post-visit**
  - Communicate assessment and care plan in electronic health record
  - Contact primary provider for care plan review and finalize that if/when they suggest changes, additions
  - Refer according to plan of care
  - Call patient 1-2 weeks after visit to communicate additional information from provider or other team members
## My Fall Risk Assessment

<table>
<thead>
<tr>
<th>Participant Name</th>
<th>Study ID</th>
<th>Date</th>
<th>Risk Factor</th>
<th>Why Does It Matter?</th>
<th>Is this a risk for me?</th>
<th>Is this a priority for me?</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Changes in leg strength, balance and/or walking</td>
<td>People with decreased leg strength and changes in balance and/or gait are more likely to trip, slip and fall.</td>
<td>Yes</td>
<td>Yes</td>
<td>“undecided” “active plan in place”</td>
</tr>
<tr>
<td>Medications</td>
<td></td>
<td></td>
<td>Medications that cause lightheadedness or tiredness (e.g., sleeping pills) can increase the likelihood of falling.</td>
<td></td>
<td>No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Postural Hypotension</td>
<td></td>
<td></td>
<td>Postural hypotension, or a drop in blood pressure when a person changes positions, increases the chances of falling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feet Footwear</td>
<td></td>
<td></td>
<td>Problems with feet, footwear can make it more difficult to walk.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Home Environmental hazards</td>
<td></td>
<td></td>
<td>Objects on the floor, loose throw rugs, low lighting, and not having hand rails can increase the likelihood of tripping, slipping, and falling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risk of</td>
<td></td>
<td></td>
<td>Osteoporosis, or fragile bones, increases the chances</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
My Plans for Reducing Fall Risks

Priority: Changes in leg strength, balance and/or walking

My Goal for the next month is:

Why it matters to me (e.g., increased balance will.....)

How will I do this?

When will I do this?

The things that could make it difficult to do this are:

My plan for overcoming these difficulties includes:

Support/Resources my Falls Care Manager will assist me with in order to achieve these goals include:

How will I monitor progress?
Falls Care Management

- Procedures continued:
  - **Follow-up**
    - Per care plan
    - Follow-up clinic visits as needed and at least annually
Decision Support: 
Assessment and Intervention Algorithms

**Algorithms:**
1. Strength, gait, balance
2. Medication
3. Osteoporosis
4. Feet and Foot-wear
5. Home Safety
6. Postural Hypotension
7. Vitamin D
8. Visual Impairment

Available at https://www.stride-study.org/clinical-protocols/

---

<table>
<thead>
<tr>
<th>Information Support: By risk factor and intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Education materials for each risk factor</td>
</tr>
<tr>
<td>▪ Presented in the third portion of our presentation today</td>
</tr>
</tbody>
</table>
System Support:
Implementation of Falls Care Management

- IT help to make electronic record use efficient through the integration of notes/communication templates, smart phrases, smart tools
- Creation of standing orders
- Clinic engagement
  - Primary care providers available to partner with falls care managers, review care plans and provide needed medical orders (e.g., medication changes, tests, referrals)
  - Pharmacists, when available, to review/provide guidance and follow up for medication de-escalation
  - Physical therapists to assess and treat changes in balance, strength, gait
  - Occupational Therapists to assess and optimize home safety
Community Support: Implementation of Falls Care Management

- Community Resources
  - Physical activity/ exercise programs
  - Home modification services
  - Transportation
Summary

- Many injurious falls are preventable
- The quality of care provided to prevent falls remains poor
- Falls care management, guided by principles of self-management, motivational interviewing, and co-management may improve quality of care provided to prevent falls
- Results of STRIDE study are expected in Spring 2020
- For more information about the STRIDE study and intervention go to: https://www.stride-study.org/

Stay on your feet, it’s the place to be - EB White
Acknowledgements

- **Funding**
  - Patient-Centered Outcomes Research Institute (PCORI)
  - National Institute on Aging

- **Stakeholder councils including older adults and professionals dedicated to preventing falls in their communities**
  - National – Martie Carnie and Cathy Hanson
  - Local (each of the 10 study sites)

- **Study participants (Healthcare systems, clinics, patients)**
Section III: Clinical Tools for Preventing Falls

Fred Ko, MD
Associate Professor,
Geriatrics and Palliative Medicine,
Icahn School of Medicine at Mount Sinai
Objectives

• To discuss clinical algorithm and tools to prevent falls in older adults:
  – Community-dwelling: Centers for Disease Control and Prevention (CDC) – Stopping Elderly Accidents, Deaths & Injuries (STEADI)
  – Nursing home: Agency for Healthcare Research and Quality (AHRQ) – The Falls Management Program (FMP)
STEADI Initiative

- STEADI (Stopping Elderly Accidents, Deaths, & Injuries) Initiative (https://www.cdc.gov/steadi/)
- Coordinated approach to implement the American and British Geriatrics Societies’ clinical practice guideline for fall prevention
Screen

Available Fall Risk Screening Tools:

- **Stay Independent:** a 12-question tool
  - **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

Modified from STEADI provider pocket guide
Stay Independent

Check Your Risk for Falling

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have fallen in the past year.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I use or have been advised to use a cane or walker to get around safely.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes I feel unsteady when I am walking.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I steady myself by holding onto furniture when walking at home.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am worried about falling.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I need to push with my hands to stand up from a chair.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have some trouble stepping up onto a curb.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often have to rush to the toilet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I have lost some feeling in my feet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take medicine that sometimes makes me feel light-headed or more tired than usual.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I take medicine to help me sleep or improve my mood.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I often feel sad or depressed.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


- At risk for falling if score ≥4 points

Assess & Intervene

Modified from STEADI provider pocket guide (https://www.cdc.gov/steadi/pdf/STEADI-PocketGuide-508.pdf)
Gait, Strength & Balance

**Timed Up & Go (TUG)**
- Assesses mobility
- Fall risk: ≥12 sec

**30-Second Chair Stand**
- Assesses leg strength & endurance
- Fall risk: below average score based on age/sex

**4-Stage Balance Test**
- Assesses static balance
- Fall risk: full tandem stand** <10 sec

Fitness professional online

STEADI functional assessments
https://www.cdc.gov/steadi/materials.html
Assess & Intervene

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

Common ways to assess fall risk factors are listed below:

- 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:

- 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)

Modified from STEADI provider pocket guide
## Fall Risk Factors Checklist

<table>
<thead>
<tr>
<th>Fall Risk Factor Identified</th>
<th>Present?</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FALLS HISTORY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any falls in past year?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Worries about falling or feels unsteady when standing or walking?</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>MEDICAL CONDITIONS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Problems with heart rate and/or arrhythmia</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Incontinence</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Depression</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Foot problems</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Other medical problems</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

### MEDICATIONS (PRESCRIPTIONS, OTCs, SUPPLEMENTS)
- Psychotropic medications: Yes/No
- Opioids: Yes/No
- Medications that can cause sedation or confusion: Yes/No
- Medications that can cause hypotension: Yes/No

### GAIT, STRENGTH & BALANCE
- Timed Up and Go (TUG) Test >12 seconds: Yes/No
- 30-Second Chair Stand Test: Below average score based on age and gender: Yes/No
- 4-Stage Balance Test: Full tandem stance <10 seconds: 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 of >10 mm Hg, or lightheadedness, or dizziness from lying to standing: Yes/No

Fall risk factors checklist:
AHRQ Falls Management Program

- Agency for Healthcare Research and Quality (AHRQ) – The Falls Management Program (FMP)
- Interdisciplinary quality improvement initiative
- Designed to assist nursing facilities in:
  - Providing individualized, person-centered care
  - Improving fall care processes and outcomes
- Clinical applications:
  - Acute fall
  - Long-term management (i.e. screening at NH admission, quarterly, annually and change of condition)
Falls Assessment, Evaluation & Referral

**RISK FACTORS**

**Medications**
- Antipsychotics
- Antidepressants
- Benzodiazepines
- Sedative/hypnotics
- Digoxin
- N/A

**Orthostatic Hypotension**
- Reduction of $\geq 20$ mm Hg in systolic pressure 1 minute after change in position from sitting to standing
- Sitting BP: ____/____
- Standing BP: ____/____
- N/A

**INTERDISCIPLINARY ASSESSMENTS**
- Primary Care Provider Report faxed
- Primary Care Provider Orders received
- Discussed in falls team meeting
- Medication review by consultant pharmacist
- Psychiatric evaluation
- Review cardiovascular medications

The Falls Management Program
## Falls Assessment, Evaluation & Referral

### Vision
- Stumbles and trips
- Difficulty finding objects or detecting changes in floor surfaces
- N/A
- Optometrist evaluation
- Ophthalmologist referral

### Mobility
- Unsafe during the Get Up and Go Test
- Unable to transfer on and off toilet, bed or chair safely
- Unsafe wheelchair seating
- N/A
- OT consultation
- PT consultation

### Unsafe Behaviors
- Tries to stand, transfer or walk alone unsafely
- Tries to climb over bed rails or get out of bed alone unsafely
- Walks or paces alone when too tired to be safe
- Propels or walks alone in unsafe areas
- N/A
- Behavioral assessment
- Evaluation of restraint use

The Falls Management Program
Wheelchair Screen

Use the following measurements to determine if the wheelchair seat and armrests are the correct size for the resident.

- **Correct Seat Width**
  - Hip width + 2 in =

- **Correct Seat Depth**
  - Thigh length – 2 in =

- **Correct Armrest Height**
  - 1” higher than elbow =

After the resident has been seated in the wheelchair for at least 1 hour, compare her position with the pictures to determine if she is seated correctly.

- Correct position with two 90° angles
- Sliding down
- Leaning over
- Leaning to one side

The Falls Management Program
Behavior Assessment

- *Five step process to better understand unsafe behavior or residents*
- **Step 1**: Define the behavior clearly
- **Step 2**: Do a deep dive about the resident’s personal and medical history
- **Step 3**: Analyze the circumstances of the behavior
  - Time of day, Frequency, Location, Situation, Resident motivation
- **Step 4**: Analyze past staff approaches and the resident’s reaction to them
- **Step 5**: Develop new individualized interventions
## Fall Intervention Plan

<table>
<thead>
<tr>
<th>RISK FACTOR</th>
<th>SELECTED INTERVENTIONS</th>
<th>RISK FACTOR</th>
<th>SELECTED INTERVENTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medications</td>
<td>For changes in psychotropic meds:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Monitor and report changes in anxiety, sleep patterns, behavior, or mood</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Monitor and report drug side effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Behavior management strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Sleep hygiene measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ no caffeine after 4 pm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ up at night with supervision, comfort measures</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ pain management</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ regular exercise, limit napping</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ relaxing bed routine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ individualized toileting at night</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ safe bathroom routine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For changes in digoxin:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>□ Monitor apical heart rate; if &lt; 50, notify PCP.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility</td>
<td></td>
<td>Increase staff assistance</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ early morning</td>
<td>□ to and from toilet</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ during all transfers</td>
<td>□ during ambulation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ other:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Correct height of bed, toilet or chair</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Keep bed at correct height as marked on footrest or wall</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use raised toilet seat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use cushion in lounge chair</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Lower lounge chair</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase bathroom safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use adequate handrails support</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use easy to manage clothing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Promote wheelchair safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use individualized, labeled wheelchair</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Check brakes and instruct pt on use</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seating Modifications</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Use all prescribed seating items</td>
<td></td>
</tr>
</tbody>
</table>

The Falls Management Program
## Fall Intervention Plan

### Orthostatic Hypotension

- **Low blood pressure precautions**
  - instruct pt to change position slowly
  - instruct pt to sit on edge of bed and dangle feet before standing
  - instruct pt to use dorsiflexion before standing
  - instruct pt not to tilt head backwards
  - provide staff assistance in early AM and after meals

- **If medication change:**
  - take postural VS q day X 3 days. If systolic drops ≥ 20 mm Hg on day 3, notify PCP

- Promote adequate hydration
- TED hose
- Other: ________________________________

### Unsafe Behavior

- **Low vision precautions**
  - use maximum wattage allowed by fixture
  - increase lighting in room
  - use adequate lighting at night
  - add high contrast strips on stairs, curbs, etc.
  - use signs with large letters or pictures
  - use high contrast to offset visual targets
  - reduce glare

- **Corrective lenses**
  - Keep eyewear within easy reach at all times
  - Encourage patient to wear glasses

- Other: ________________________________

### Behavior management strategies

- Increase assistance and surveillance
  - Position or pressure change alarm
  - Movement sensor
  - Locate patient near station
  - Intercom
  - Toilet at regular intervals
  - Increase activities involvement
  - Other ________________________________

- Reduce risk of injury
  - Low bed
  - Floor mat
  - Helmet, wrist guards, hip protectors
  - Non-slip mat
  - Non-skid strips or non-skid rug
  - Non-skid socks
  - Lower or remove side rails

- Increase comfort
  - Pain management
  - Frequent rest periods
  - Recliner or chair with deep seat
  - Rocking chair
  - Wheelchair seating items
  - Exercise
  - Cradle mattress
  - Sheepskin, air mattress or pillows

- Other: ________________________________

---

The Falls Management Program

Interdisciplinary Team Approach

**MD/NP/PA**
- Screening
- Gait, strength & balance assessment
- Medication review & modification
- Feet and footwear assessment
- Vitamin D management
- Comorbidity management

**RN**
- Screening
- Gait, strength & balance assessment
- Medication review
- Orthostatic blood pressure
- Visual acuity
- Feet and footwear assessment

**SW**
- Identify and refer to community-based exercise & fall prevention programs

**OT**
- Home safety & hazards

**PT**
- Gait, strength & balance assessment & training

**Patient**
Resources

- STEADI
  - Algorithm for fall risk screening, assessment, and intervention
  - Provider pocket guide
  - Fall risk factors checklist – provider checklist for risk of falling
    - (https://www.cdc.gov/steadi/pdf/STEADI-Form-RiskFactorsCk-508.pdf)
  - Stay independent brochure – patient checklist for risk of falling
  - Functional assessments – handouts and videos
    - (https://www.cdc.gov/steadi/materials.html)
  - Integrating fall prevention into practice – interdisciplinary team responsibilities
  - Conversations about fall prevention – stages of change model for behavior modifications
Resources

- STRIDE Study
  - Clinical instruments (e.g. my fall risk assessment)
    - (http://www.stride-study.org/clinical-instruments/)
  - Clinical protocols (e.g., medication risk reduction algorithm)
    - (http://www.stride-study.org/clinical-protocols/)
  - Home exercise video and manual
    - (http://www.stride-study.org/home-excercise/)

- National Council on Aging (NCOA)
  - Fall prevention resources (e.g. evidence-based falls prevention programs, tips for older adults & caregivers)
    - (https://www.ncoa.org/healthy-aging/falls-prevention/)
  - State Falls Prevention Coalition Contacts

- AHRQ Falls Management Program