Fall Prevention and Balance Training ACE Program

Purpose
The purpose of this program is to create an interdisciplinary approach to managing the geriatric client in a skilled nursing facility that will address and prevent the incidence of falls through interventions within the scope of practice for physical, occupational, and speech-language pathology services.

Contributing Factors That May Increase the Risk of Falls
There are several factors that can contribute to an individual being at greater risk for falls. Some of these factors include but are not limited to:

- Adverse drug reactions or the use of multiple medications (polypharmacy)
- Neurological degenerative diseases (i.e. Parkinson Disease, Multiple Sclerosis, Alzheimer's dementia, etc)
- Acute onset of illness
- History of prior falls
- Cognitive impairment which affects memory and safety judgment
- Environmental factors including dim lights, loose rugs, improper foot wear, urinary urgency, inadequate wheelchair positioning, wet floors, clutter, etc.
- Physical function impairments including increased sway, weakness, impaired ROM, reduced sensory input, and slowed reaction time

Patient Identification
There are several ways to identify residents who may benefit from therapy services to address deficits in ambulation and mobility.

> ***Observation*:** Observe residents as they move throughout the facility. Is someone having difficulty getting to the bathroom? Is someone using an assistive device unsafely? Is someone looking unstable or slower when they walk to meals? Is someone reaching for furniture or railings while walking? Is someone expressing fear about walking or transferring? Is someone using the wheelchair more?
>
> ***Interview of Staff*:** Talk with facility staff to see if they have noticed anyone in particular having more difficulty walking. Ensure nurses, nursing assistants, activity staff, social workers and dietary staff are all interviewed over a variety of shifts to ensure all bases are covered.
>
> ***Educational Opportunities*:** Don't miss an opportunity to educate! If there is a small group of nursing assistants, talk with them for a few minutes and briefly explain some of the criteria you are looking for to see if

there is a decline with a resident. If they know what therapy can do to help a resident, they may be more likely to help generate referrals.

Fall Committee: Many facilities have a falls committee to review and problem solve issues pertaining to residents who fell or are at high risk for falls. Consider sitting in on a falls committee meeting or asking them to make referrals for therapy when residents at risk are identified.

Criteria for Patient Identification

The following are potential criterion that may indicate therapy services are indicated:

- Incidence of a fall or multiple falls
- Observed loss of balance during transfers or ambulation
- Resident uses walls, rails, or furniture to steady themselves during ambulation
- Resident uses assistive device improperly
- A change is observed in the walking pattern (i.e. – shuffling, foot drop, tripping, decreased distance, increased time, etc.)
- Resident withdraws or is unable to participate in activities or walking to meals
- Resident voices a fear of falling
- Resident appears more weak and is not strong enough to do what they were previously able to do
- Decreased safety when performing transfers including toilet transfers
- Observable environmental obstacles including room arrangement, improperly fitting footwear, oxygen cording, etc.
- Need of more physical assist for transfers or ambulation
- New use of a standing or full lift due to patient inconsistency or decline in mobility
- New difficulties with hearing or vision
- Change in medications
- Progression of cognitive impairment (dementia)
- New complaints of dizziness (with position changes or without)
- Leg length differences
- Change in standing balance posture
- Inability to continue walking while talking
- Decreased gait speed
- Decreased stride length
- Decreased single stance time
- Pain reports or increased pain medication usage

Documented Sources of Support for Therapy Intervention

MDS

When providing therapy services to long term residents of a skilled nursing facility, there are a couple key areas on the MDS (Minimum Data Set) to check to see if there has been a change. The presence of a change in score or a difference in current status to previous status will signify a change in the condition of the resident and help support the intervention of therapy services.

- Section J, 4a, b, c, d (Accidents: falls, hip fractures, other fractures)
- Section G, 1b, c, d, e, f, i (Transfers and walking)
- Section G 3 a, b (Balance)
- Section G 4 d. e (ROM limitations on lower extremities)
- Section G 5 a (Uses cane, walker or crutch)
- Section T a, b, c, d (Walking)

Quality Indicators

Review the indicators:

- Incidence of new fracture
- Prevalence of falls
- Prevalence of incontinence

Nursing Notes

Review the nursing notes to identify documentation related to the resident needing additional help/time to walk to meals, decreased participation in groups and activities, complaints of pain or soreness in the lower extremities, change in reports of ambulation safety, needing more assist or a lift for transfers, recent medication changes and their effects, new changes in the resident's medical condition such as a UTI (Urinary Tract Infection) or any incidence of falls.

If nursing has not included any supportive documentation, it is OK to request they document because it will help support the need for therapy services. Documentation from nursing that identifies the problem will support therapy intervention.

Incident Reports

Look for reports of resident falls or being lowered to the floor to help identify those who may potentially benefit from therapy services. Note: Incident reports should not be referenced in your documentation but may be useful in identifying a resident in need of therapy services.

Potential Interventions and Plan of Care

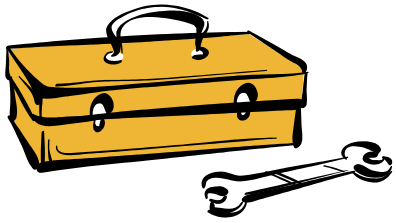
The plan of care for each resident is individualized to their own deficits and impairments. The following are possible interventions that could be utilized when addressing ambulation difficulties and fall prevention. Although physical therapy is the primary therapy discipline involved in treating problems with balance and gait, there may be a role for occupational therapy and speech-language pathology services in the treatment of problems with falls and balance. Most often, residents with these deficits are also impaired in their ADL's. The decision

of who should be involved in the treatment of each individual should be done while avoiding duplication of services.

- Assess static and dynamic balance in sitting and standing. Address retraining through facilitating modified compensation strategies to improve responses to perturbation.
- Assess balance strategies used when experiencing a loss of balance including ankle strategies, knee strategies, hip strategies, stepping strategies and reaching strategies.
- Assess for changes in muscle tone, strength and coordination in extremities. Focus strengthening efforts on weak muscles to carryover to function.
- Assess for changes in range of motion especially in the joints that directly affect gait: ankle plantarflexion/dorsiflexion, knee flexion/extension, hip flexion/extension, postural positioning, etc.
- Assess gait cycle for deviations during the phases of gait.
- Assess if an assistive device is indicated for gait and determine appropriate device.
- Provide adequate recommendations regarding a resident's level of safety and need for assist in mobility to allow the facility's interdisciplinary team to determine what safety measures are appropriate.
- Try to determine what behavior or activity led to the fall to determine if the falls are linked to toileting or other resident needs.
- Assess cognitive and functional ability to utilize call light system.
- Assess the sensory and proprioceptive responses of the lower extremities to determine if deficits are present that may affect balance and gait
- Analyze if orthotic devices would be appropriate.
- Analyze environment including room arrangement, accessibility of items, improperly fitting footwear or clothing, oxygen tubing, wheelchair fit and brakes, bed height and general assessment of environment to reduce tripping hazards
- Review the medications with the interdisciplinary team.
- Review toileting frequency for pattern of need.
- Assess visual/perceptual ability.
- Assess cognitive status using measurement such as the Allen Cognitive Levels to determine appropriate caregiver approaches and patient capabilities given cognitive status.
- Train resident in energy conservation techniques and pacing activities to avoid unstable walking due compensated cardiovascular status
- Consider recommendation and training of adaptive equipment to reduce effort or unsafe mobility by resident.
- Assess safety and judgment of resident that may be contributing to falls
- Assess for use of modalities (PENS or E Stim) for neuromuscular reeducation, increased muscle strength, or to increase blood flow. Electrode placement may be on lower extremities or on triceps to improve upper extremity recruitment for sit to stand activities.

- Progressive resistive exercises to a one repetition max
    - 1 set warm up and cool down at 50%
    - 3 sets of 8-10 reps at 40% - 80% of 1 rep max
    - 3-5 minute rest between sets
    - Three times a week
- Monitor and document exertion levels using the following parameters:
    - Heart rate
    - Borg scale
    - Exertional talk test
- Utilize balance and Tai Chi techniques to retrain balance compensation responses.
- Incorporate motor control training techniques into treatment.

GRA Tool Box of Tests and Measures



Objective Tests and Measures to Quantify Balance and Gait

Berg Balance Test

Items Needed

- Unsupported sitting surface (no armrests – can use mat table)
- Supported sitting surface (armrests)
- Stopwatch or watch with second hand
- Distance measured on wall in cm for reach test
- Object to pick up from the floor (shoe, cone, etc)
- Step or stool (about 21 cm high)

Test Procedure

Read the 14 items scored on the test itself. Instructions are given for each point.

Rating Scale

Scores >45 indicate that the resident is safe and independent in ambulation and does not require an assistive device or supervision.
(Berg K, Maki B, Williams J, Holliday P, Wood-Dauphinee L, Clinical laboratory measures of postural balance in an elderly population. Archive of Physical Medicine and Rehabilitation. 1992; 73:1073-1080.)

Scores under 48 indicate an 8:1 odds ratio for can usage.
(Berg K, Thorbahn & Newton, Newton)

Timed Up & Go Test (TUG)

Items Needed

- Chair with arms
- Stopwatch

Test Procedure

- Have the patient stand up from a standard chair with arms, walk a distance of 3 meters, turn walk back to the chair, and sit down again without assistance.
- The patient should keep a comfortable and safe pace while walking.
- Perform the test twice and average the scores.

Rating Scale

- Older adults that take longer than 14 seconds to complete are at an increased risk for falls.
  (Shumway-Cook, A., Brauer, S., & Woollacott, M. (2000). Predicting the probability for falls in community-dwelling older adults using the timed up & go test. Physical Therapy, 80(9), 896-903.)

Gait Speed

Items Needed

- Tape measure
- Stopwatch

Test Procedure

- Identify a 10 meter walking area and mark off an area 2 meters from the starting point and 2 meters from the end.
- Begin time when the patient crosses the first 2 meter mark and stop timing when the patient crosses the second 2 meter mark (so you only time the 4 meters in the middle).
- Tell the patient to "walk at a comfortable, safe speed".
- Record the time in seconds. The score should be the meters by the seconds to give a result of __ meters/second.
- Perform the test twice and average the scores.

Rating Scale

- Household ambulators range from .23 - .27 meters/sec
- Community ambulators range from .4 - .8 meters/sec

Functional Reach

Items Needed

- Yardstick & tape (or a piece of paper taped to the wall to mark the positions on and measure later)
- Wall

Test Procedure

- Tape the yardstick onto the wall at the height of the acromium of the patient.
- The patient stands unsupported with their shoulder against the wall with their arm (closest to the wall) flexed at 90° at the shoulder and their hand in a fist.
- Record the position of the 3rd finger at the initial position in cm.

- Ask the patient to “reach their fist forward as far as they can without losing their balance or taking a step”. Do not allow the patient to touch the wall and make sure they keep their hand at the level of the yardstick. Watch for strategies which include shoulder protraction, ankle plantarflexion, trunk rotation, etc. and correct to ensure appropriate alignment.
- Measure the position of the 3rd finger in the extended position in cm.
- Subtract the initial position from the end position to get the score
- Perform the test twice and average the scores.

Rating Scale

- The patient is at increased risk for falls if the excursion is less than 25 cm.

(Derived from Merton Sutton and Wandsworth Health Authority, 1999 Dr Dawn Skelton, Imperial College School of Medicine)

Rhomberg & Sharpened Rhomberg

Items Needed:

- Stopwatch

Test Procedure

Rhomberg

- Have patient stand with feet together and ask them to stand static without upper extremity support for 60 seconds. Stop the timing if the patient moves their feet or if they reach for an object to hold onto.
- Next ask the patient to do the same thing but close their eyes. Stop the timing if the patient moves their feet, reaches for an object to hold onto, or opens their eyes.
- Perform the test twice in both positions and record the longest balance time.

Sharpened Rhomberg

- Have patient stand with heel to toe and ask them to stand static without upper extremity support for 60 seconds. Stop the timing if the patient moves their feet or if they reach for an object to hold onto.
- Next ask the patient to do the same thing but close their eyes. Stop the timing if the patient moves their feet, reaches for an object to hold onto, or opens their eyes.
- Perform the test twice in both positions and record the longest balance time.

Rating Scale

- Scores less than 48 seconds indicate that the patient may be at risk for falls.

Tinetti

Items Needed

- Chair with armrests
- Object to pick off of floor

Test Procedure

- Follow the directions listed on the testing instrument.

Rating Scale

- Scores below 19 are at increased risk of falls.

10 Minute Walk Test

Please refer to pg 6 in Appendix of ACP book (for those sites who are ACE).

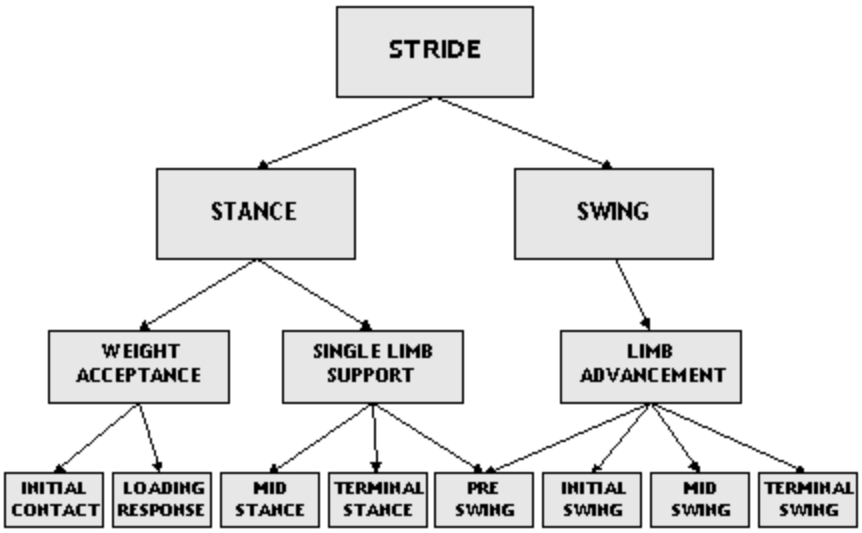
Documentation & Coding

Common Codes to Bill

97001	PT Evaluation
97003	OT Evaluation
97110	Therapeutic Exercise
97112	Neuromuscular Reeducation
97116	Gait Training
97535	ADL Retraining
97530	Therapeutic Activities
97537	Community Integration

Documentation Pointers

- Ensure documentation reflects the impairments effect upon:
  - Strength grades
  - Range of Motion
  - Balance
  - ADL Scores
- When describing functional status, be sure to mention risk of falling and how impairment scores relate to ability to function.
- Where abnormal components of ADL tasks exist, comment on the effect pain has upon the task performance.
- Document the therapeutic interventions used and the patient's response.
- Break down the gait cycle to comment on the particular part. Here is a breakdown on the phases of gait:



Taken from the Molson Medical Informatics Project, 1999

Comment on the specific parts of the cycle that are impaired at each part of the gait cycle.

Initial Contact: Comment on knee extension, ankle should be at neutral position or slightly dorsiflexed. Heel should contact the ground first.

Loading Response: Approximately 15° Knee flexion and 15° Ankle dorsiflexion is needed. Quad and gluteals are working to stabilize knee and hip.

Midstance: Comment on toe off, ability to balance center of gravity over foot, quad/hamstring co-contraction to hold mid-stance position.

Terminal Stance: ends when contralateral foot impacts ground, comment on stability, note position of pelvis,

Pre-Swing: Knee should be able to flex at 35°, ankle should plantarflex 20°, toes begin to plantarflex,

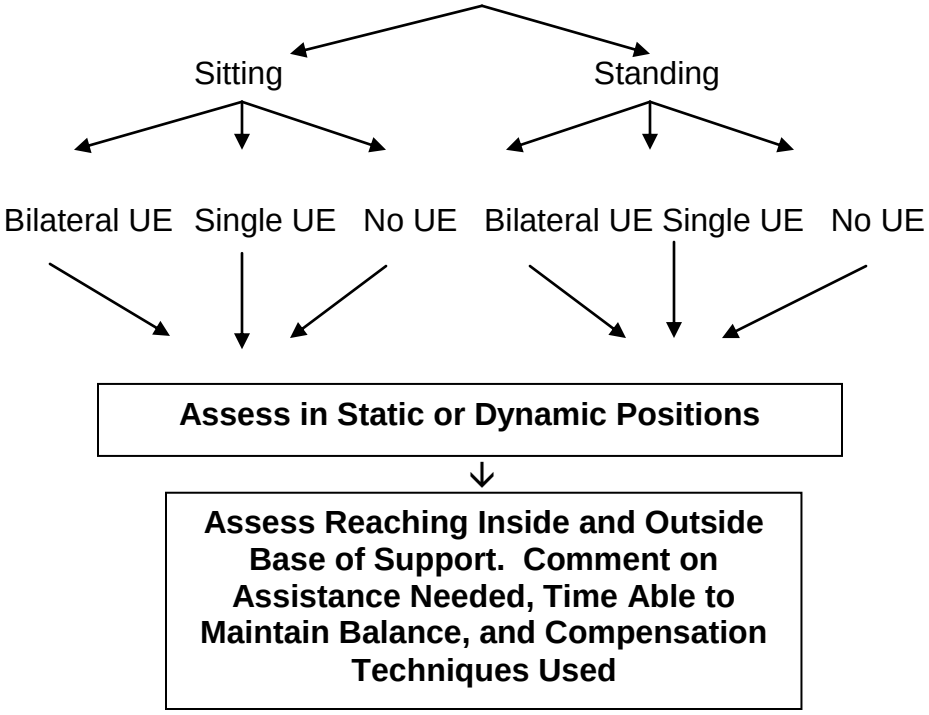
Initial Swing: Maximum knee flexion occurs at 60° at this phase, active quad contraction to prepare for swing motion

Mid-Swing: Occurs until tibia is perpendicular to the ground.

Terminal Swing: Hamstrings activate to decelerate the swing and control the position of the foot at heel strike.

- Comment on common age related changes that occur with gait.
    - Gait Velocity – speed of gait, time in seconds
    - Cadence – Rhythm of reciprocal steps
    - Stance Width – Length of space between legs during stance phase
    - Posture – Flexed at hips, kyphosis, lordosis,
    - Step length – distance between steps
- Objectify their balance measurement using an objective progression of activities. Identify how much assist needed, time required, cues needed, etc. to perform activities in the following positions.

Balance Assessment



- Reviewing a restorative program: When a resident is on a restorative program, the resident should be evaluated by a therapist prior to making any changes or updates to a transfer or walking program. Please note that Medicare does not consider therapy to increase distance or provide cues for safety or supervision to be skilled therapy treatment. The documentation present needs to justify why physical therapy services are needed and nursing could not complete the task.

- Goal suggestions:
  GOOD GOALS:
  - Pt. will rise sit to stand 2 of 3 trials with no loss of balance and SBA in one week to walk to bathroom.
  - Pt. will ambulate 100'x1 with wheeled walker and Min A with adequate heel strike on R during weight acceptance for safe ambulation with staff on unit in one week.
  - Pt. will reach an object from the top shelf of the closet in the room, keeping one hand on walker with SBA for safe object retrieval in two weeks.
  - Patient to demonstrate increased balance by a Tinetti Score of ___ of ____ indicating that he/she is at a decreased risk for falls.

  BAD GOALS*:
  - Resident to walk 50' with wheeled walker and Min A.

- Resident to improve transfers to Mod A x2.
- Resident to stand for 1 minute with Min A.
- Staff to be educated in use of EZ stand.
- Maximize patient ability with staff education in performing FMP.

*These goals don't mention function, objective measures, or time frames.

- Identify the deviations/deficits that exist in the gait pattern to support the therapy services you are providing to correct. Remember to tie in function and that the patient can be reasonably expected to improve their gait and gait safety (alone or with the assistance of caregivers). See appendix pg 8 in Fall ACP book (for ACE sites only).
- Differentiate the services you are providing from the restorative care that a nursing assistant can provide. If the documentation just describes assist and distance, that does not support that the skills of a therapist were necessary. Be sure to justify why the resident or patient still needs skilled therapy and the treatment cannot be done by restorative nursing.
  - Example: Pt. still at risk for falls and injury without PT to continue to address gait instability due to ankle weakness, gait abnormality and fair (-) balance. Needs continued neuro re-education LE triphasic to R ankle and increase gait.
- Remember that weekly you should describe the gait pattern in depth – it does not need to be done daily. At the bottom of your flow sheet, comment in depth at the impairments and deficits of the gait pattern and what is being done to address it (gait training, ther ex, balance training) to show the skills of a therapist.
- To grade independence in your documentation, consider the following:
  - Demonstrates consistency or activity is done safely all the time
  - No cueing needed (grade physical or verbal cues needed by level or percentage)
  - Address independence performing dynamic vs. static activities
  - Ensure they do not require assist from trapeze and/or side rails to perform bed mobility activities.

Inservice Outline
Fall Prevention and Balance Training Program

What are signs that a patient may be having problems with falls and balance?

- Incidence of a fall or multiple falls
- Observed loss of balance with walking or transfers
- Seeing a resident use furniture, walls or railings to steady themselves while walking
- Not using a cane or walker properly
- Shuffling, tripping, or unusual walking pattern
- Decrease in participation in activities due to problems with mobility
- Fear of falling
- Increased weakness and problems with coordination
- Poor safety with walking or transfers
- Obstacles in room including general set up, oxygen cording, or improper fitting footwear
- Needing more assist or time to walk or transfer

What can you do if you think a resident may be having trouble with falls or balance?

- Tell the nurse the problems you observed and ask them to document it in medical record.
- Tell a member of the therapy team or leave a note in their mailbox.
- Write what you saw on the 24 hour report.
- Bring it up for discussion at morning report or other patient related meeting.
- Complete a request for therapy screen form.

What can therapy do to help these residents?

- Evaluate the resident to see what they are able to do.
- Provide treatment to increase their safety and help them be as independent as possible.
- Development recommendations that can be integrated into ADL's and a restorative program.
- Use treatment to help the resident get stronger, increase flexibility, balance and coordination to make them steadier on their feet.
- Make recommendations to the environment to make it as safe as possible.
- Recommend and train the resident how to use an assistive device.
- Retrain balance compensation strategies to help them recover quickly when they loose their balance.

What can be done everyday to help with falls and balance?

- Keep rooms, bathrooms, and hallways free of clutter.
- Keep the cane or walker within reach of the resident at all times.
- Keep the call light within reach of the resident.
- Attend to the toileting and other needs of each resident at the appropriate time.
- If you see a resident moving that normally requires help, assist them immediately.
- Ensure rooms and hallways are well lit.
- Encourage residents who are able to walk independently to walk more to maintain their balance and strength. If a resident walks with assist and is on a restorative program, follow the instructions daily.
- Make sure the resident locks their brakes when they stand up from the wheelchair.

Any questions?