

## Section 16

### Falls CAP

#### Problem

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A fall is defined as an unintentional change in position where the person ends up on a lower level (for example, floor, ground, or seat). Falls are a leading cause of morbidity and mortality as persons age and are an important cause of injury among younger vulnerable populations. Interventions that address risk factors for persons who have never fallen focus on multiple goals in areas assumed to be related to falling. These include exercise, balance, delirium, and drug interactions. Multiple CAPs address these issues, but the Falls CAP does not trigger on those who have never fallen. Rather, this CAP focuses on persons who have a higher risk for falling in the future as indicated by a history of prior falls.

Fall rates depend on the frailty of the person, and thus will differ as a function of where the person lives and the service supports received. Over a 6-month period, the expected fall rates differ by residential setting: 40% in long-term care facilities, 35% in home care, and 20 to 30% for older adults living independently in the community. Of those who fall in a 6-month period, most fall only once, and up to 10% of these persons will experience a serious injury — especially hip fractures.

Falls may be an indicator of functional decline and the presence of other conditions, such as delirium, adverse drug reactions, dehydration, and infections. This CAP provides a systematic approach to evaluating a fall, strategies to prevent future falls, and care planning suggestions.

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#### Overall Goals of Care

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- Identify and change underlying risk factors for falls.
- Promote activity in a safe manner and in a safe environment.
- Recognize common pathways among falls, incontinence, and functional decline. Fall prevention is not an isolated goal but part of a larger objective of promoting physical activity and improved quality of life.

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#### Falls CAP Trigger

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This CAP triggers two groups of persons for specialized follow-up.

TRIGGERED INTO THE HIGH RISK OF FUTURE FALLS GROUP,  
BASED ON PRIOR REPORT OF A MULTIPLE FALLS

This group includes about 7% of persons in long-term care facilities, 12% of home care recipients, and 3% of older adults living independently in the community. In a long-term care facility setting, about 40% of the persons triggered into this group will fall over a 90-day period. The rate of falls in home care for this same time period tends to be about 65%.

TRIGGERED INTO THE MEDIUM RISK OF FUTURE FALLS GROUP,  
BASED ON PRIOR REPORT OF A SINGLE FALL

This group includes about 15% of persons in long-term care facilities, 15% of home care recipients, and 10% of older adults living independently in the community. In a long-term care facility setting, about 25% of the persons triggered into this group will fall over a 90-day period. The rate of falls in home care for this same time period tends to be about 40% .

NOT TRIGGERED

No known prior fall. This group includes about 78% of persons in long-term care facilities, 78% of home care recipients, and 83% of older adults living independently in the community.

## Falls CAP Guidelines

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### General Care Plan Considerations

- ☐ Have the circumstances of the fall(s) been evaluated?
- ☐ Has the person been assessed for the contributing causes of the falls?
- ☐ Has the person been assessed for osteoporosis? Is it correctly managed?
- ☐ Restraints should be avoided as a fall prevention strategy. They are not associated with a decreased risk of falls or injury associated with falls. The person's right to maintain mobility, despite a slightly elevated risk of falling, should be considered.
- ☐ Does the person need a gait, strength, or balance program?
- ☐ Has a physician reviewed current medications for their possible effect on falls, including intrinsic contributory factors such as balance, gait, strength, sensory perception, and cognition?
- ☐ Is there a program in place to address blood pressure (especially postural changes) and cardiac problems? Has a physician reviewed issues related to blood pressure?
- ☐ Has a physician reviewed the possibility of vitamin D deficiency?

### Assessment and Care Planning

Common risk factors for falls, other than a history of prior falls, which is by far the best predictor, are outlined in the following list. Each triggered person will likely have one or more of these risk factors. Modifiable risk factors include

- ☐ Physical performance limitations: balance, gait, strength, and muscle endurance
- ☐ Visual impairment
- ☐ Cognitive impairment
- ☐ Postural hypotension (with tendency to syncope)
- ☐ Cardiac arrhythmia
- ☐ Medications (for example, benzodiazepines)

- ☐ Environmental factors
- ☐ Low levels of physical activity
- ☐ Pain from osteoarthritis and other conditions
- ☐ Diseases, including Parkinson's disease, epilepsy, diabetes, alcoholism, and stroke
- ☐ Vitamin D deficiency

**Response to prior fall.** A history of falls is the best predictor for future falls. Persons who fall are at a higher risk of falling again, often under similar circumstances. This is particularly true for persons who have had multiple falls. Review the history of falls with the person, family, caregivers, and in the medical/clinical record. Usually a 1-year look-back period is sufficient for this review.

- ☐ What were the circumstances of the fall?
  - ☐ When did it occur? Night? Day? The exact hour?
  - ☐ Did it result in injury?
  - ☐ Where did the fall happen? (In the bedroom, bathroom, living room, corridor, on stairs, or outside?)
  - ☐ Was it related to taking medications?
- ☐ Were any changes to the plan of care made after the fall? Are these changes still applicable to the current situation or does the care plan need updating?

**Does the person have limitations in physical performance (balance, gait, muscle strength, and endurance deficits)?** Watch for the following indicators of balance problems: sitting, getting up, walking, and turning around. Also, since gait and muscle strength are also related to vitamin D deficiency, this should always be considered.

- ☐ Does the person have difficulty maintaining a sitting balance?
- ☐ Does the person need to rock his or her body or push off on the arms of a chair when standing up from a chair?
- ☐ Does the person have difficulty maintaining a standing position?
- ☐ Does the person have a gait problem (for example, unsteady gait even if walking with a mobility aid or personal assistance, slow gait, or takes small steps)?
- ☐ Does one leg appear to be shorter than the other, throwing the person off balance when walking?
- ☐ Does the person have musculoskeletal problems such as kyphosis (curvature of the spine), weak hip flexors from extended bed rest, or shortening of a leg?
- ☐ Does the person have a vitamin D deficiency?

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**Care Planning Suggestions for Persons Who Need Assistance  
When Walking or Who Are Nonambulatory**

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Strategies for improving balance, mobility, and endurance should be incorporated in routine daily activities.

- **Determine if the person can maintain an upright posture for at least 2 minutes without symptoms of light-headedness.** Incorporate into routine activities such as toileting or other daily tasks so that the person is given an opportunity to stand every couple of hours.
- **For the person who is unsteady, but tries to stand up on his or her own, monitor the person and take the person to the bathroom regularly.** Consider appropriately located grab bars.
- **Walk for exercise a couple of times a day.** Measure distances in the living environment and keep a record of maximum distance walked. Also walk to meals and bathroom as part of the daily routine.
- **Adjust sitting posture in a chair on a regular basis, especially for the person with a tendency to slump down.** When readjusting, offer the person the opportunity to stand and balance, as well as sitting and balancing without leaning on the back of the chair or using armrests for support.
- **Encourage self-propulsion in a wheelchair.** Record the distance the person wheeled by him- or herself or with cueing. (To be successful in wheeling the chair, the wheelchair must be a good fit. Make sure that feet can reach the floor and at least one hand can reach the wheel and the brakes.) The person who can walk with help can increase his or her endurance by wheeling the chair around the living environment using both feet or one leg and one arm.
- **Involve the person in activity programs that provide exercise for balance, muscle strengthening, and flexibility.** Special interventions for physical performance should be considered following a period of low activity due to illness or other change in status, **and** following a fall.
- **Physical activity programs such as those offered at senior centers, YMCAs, community centers, mall walks, tai chi, yoga, and dancing programs are potential activities that may improve or maintain balance.**

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**Does the person have a visual problem?** Visual field deficits, cataracts limiting light perception, and inappropriate eyeglasses are especially common. Review the person's history and assess for the following:

- ☐ Has the person been assessed for visual problems, and are there any ophthalmologic diagnoses? Is the care plan up-to-date in terms of medical and environmental treatments for these conditions? Is the person a diabetic?
- ☐ Does the person wear eyeglasses for reasons other than reading? Have the eyeglasses been assessed recently to assure satisfactory correction?
- ☐ Does the person neglect (appear not to see) objects on one side of the visual field?
- ☐ Does poor illumination in the environment affect visual ability?

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### **Care Planning Suggestions for Visual Impairment**

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- **Ask the person what he or she can see when looking straight ahead.** Know what the person can see in his or her field of vision and place needed objects (for example, mobility aids and dishes) accordingly.

- **Ask the person about his or her ability to differentiate contrasts and surface textures.** Persons with visual impairments may have difficulty detecting changes in levels (for example, stair steps) or the type of surface they are walking on (for example, dry, wet, or icy pavements). Environmental modifications may be useful in some cases (for example, use of tape to mark stair steps). Orientation and mobility training may be offered to support navigation and improve awareness of external environmental conditions.
- **Practice orienting the person to his or her living environment,** keeping in mind what he or she can see. Use visual cueing as reminders and for orientation.
- **Seek advice of occupational therapists for visual cueing.** They have special expertise in treating and providing consultation for neglect of one side of the body or one side of the visual field. These impairments normally result from a stroke.
- **Consider referral to an optometrist or ophthalmologist** if the person has not had an eye examination in the past year.
- **If new visual problems or perceived changes are identified, refer to a physician or optometrist.**

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**Does the person have a neurological disease, such as Parkinson's disease, with a tremor or rigidity, or a stroke with one-sided weakness?**

**Does the person have a metabolic disease such as alcoholism or diabetes (hypoglycemia)?**

**Is the person cognitively impaired (one of the more important risk factors for falls)?** Review the person's history and watch for the following:

- ☐ Does the person have cognitive performance deficits in memory or everyday decision making?
- ☐ Does the person wander? Is the environment safe in which to ambulate?
- ☐ Does the person consider him- or herself (or appear to consider him- or herself) able to function at a higher level than he or she is actually capable of? Consider that risky behaviors (standing up alone, getting out of bed alone) are often a result of an unmet need (for example, a need to void). Attending to these needs on a routine basis (for example, by scheduling a toileting plan) may prevent the person from trying risky behaviors. As well, the care provider may need to explore the person's perception and acceptance of his or her physical limitations.
- ☐ Review the medications the person is taking. Look for those that can affect the person's level of consciousness, cognitive performance, judgment, and sensory perception.

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### **Care Planning Suggestions for Cognitive Impairment**

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- **Build wandering about the living environment into exercise-related activities.** Involve the person in purposeful tasks to keep him or her busy and active.
- **Avoid the onset of behaviors** that put the person at risk (for example, address pain, thirst, hunger, and need to toilet).

- **Keep the person active, mobile, and improve balance.** The person with cognitive impairment is less able to learn exercises and learn to use assistive devices for mobility, but he or she can improve with practice and repetition. He or she may take a longer period of time or require greater intensity of intervention to improve. He or she may respond well to activities that he or she did in the past. Find out what activities he or she liked to do.

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**Medical assessment: Does the person have a problem with blood pressure, an arrhythmia, an especially slow heart beat, or take medications that may be associated with falls?**

- ☐ Take heart rate to assess if it is too low or not regular.
- ☐ Take blood pressures when the person is lying down, sitting up, and standing to detect orthostatic (postural) hypotension (drop in blood pressure with position changes).
- ☐ Compare blood pressures before breakfast and about 20 minutes after breakfast to evaluate for postprandial (after meal) hypotension.
- ☐ Is the person taking neuroleptic, anxiolytic, sedative/hypnotic, or antidepressant medications? Does he or she take sleeping pills regularly? If so, for how long has the person been taking these medications? Are medications given regularly or PRN? PRN medications may be associated with a higher risk of falls. If neuroleptics are taken, consider a behavior mapping process to check for side effects.
- ☐ Is the person taking cardiovascular medications, COPD medications, or diuretics that might predispose him or her to hypotension?

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**Care Planning Suggestions for Medical Problems**

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- **Routinely help/instruct the person to get up from a bed or chair slowly**, allowing for time to balance at the edge of the bed or chair.
- **Consider daily use of support hose.**
- **Encourage the person to avoid large meals** (have more frequent small meals) and/or rest after each meal.
- **Review all medications that can cause blood pressure changes.** Change medication, dose, or timing of dose as indicated. Is the dose **timed** to minimize negative effects? For example, taking a diuretic in the evening may increase frequency of urination at night; getting out of bed at night places the person at greater risk of falling. Consider a morning dose, if possible.

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**Review environmental factors that could precipitate a fall.**

- ☐ Look for hazards and make sure that proper assistive devices and spatial and structural features are in place (for example, grab bars).

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**Care Planning Suggestions for Environmental Factors**

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- Assess the environment and provide for
  - Proper lighting for each time of day or night
  - Elimination of glare
  - Proper height of bed and chairs
  - Proper bars, handrails, and devices in bathroom
  - No shine floor/carpet, nonskid strips
- Check hallways, bedrooms, and bathrooms for obstacles.
- People using wheelchairs and walkers need enough space to maneuver safely. A 5-foot (1.5 m) turning radius is considered ideal for most wheelchair users.
- Check for any recent change in the environment (for example, just moved into a new home). If the person has made such a move, has he or she been well oriented to the environment?
- Can the person get into the bathroom with an appropriate mobility aid? (Doorways less than 36 inches [90 cm] wide may be a problem.)
- Should a commode be used at the bedside at night rather than having the person walk to the bathroom in the dark or when half-asleep?
- Is there a need for alternative types of seating — chairs or wheelchairs? Assessment by a therapist can determine the best seating in accordance with the person's physical condition.
- Is the adaptive equipment being used properly?
- Is the assistive device in good condition? Sometimes persons use canes, walkers, and wheelchairs that are not suitable for their size and height. Has the person's status changed, or is there any other reason to believe a new device is needed?
  - Is the device new to the person? Does the person need additional training in how to use the device, when to use it, and what safety procedures must be taken?
  - Are those helping the person aware of how much help or supervision the person needs?
- Check for correct, properly fitted footwear.

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**If in a long-term care or assisted living facility — after a fall, address immediate health concerns and then review the previously listed risk factors to change and improve the care plan. Observations:**

- ☐ Compare the vital signs to the person's usual/baseline pattern; be ready to report prior and current vital signs to the physician.
- ☐ Prepare an incident report as per facility procedures.
- ☐ Contact the physician without delay if any of the following are observed:
  - ☐ Abnormal vital signs
  - ☐ Suspected dehydration (use BUN/creatinine ratio, if available; otherwise assess for change in urine volume or drinking habits) or infection
  - ☐ Change in mental status
  - ☐ Change in motor function or speech
  - ☐ Inability to resume activity
  - ☐ Signs of injury



- Medications that might have contributed to the fall
- Alcohol abuse

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### Care Planning Suggestions after a Fall

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- Consider changes in medications, or timing or dosage of medications.
- Consider consults to physical or occupational therapy to assess change in status and plan interventions as needed.
- **Revise care plan to include additional supervision or a supervised program to help the person resume previous activity levels.** Take into consideration building confidence, modifications in response to potential problems associated with the fall, and any new adaptations due to injuries suffered in the fall.

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- If none of the previously listed conditions are present, continue evaluating the circumstances of the fall. Use a consulting pharmacist as a resource in this evaluation, as necessary.
- Review the person's medications, focusing especially on **new** medication(s), drug dosages, or new combinations of drugs. Review the length of time from the change to the onset of symptoms.
- Review results of any laboratory tests with the physician.
- Ask the person to describe how the fall occurred.
- Evaluate the person for a need to avoid a decline in function secondary to a fall. Injuries, low activity because of illness, or fear of future falls may all contribute to a decline in function. [Review ADL CAP.]

### Additional Resources

**American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopedic Surgeons.** 2001. Panel on fall prevention: Guideline for the prevention of falls in older persons *JAGS* 49: 664–72. **Note:** These comprehensive clinical practice guidelines are the most up-to-date in print and are the results of a collaborative effort between the American Geriatrics Society, the British Geriatrics Society, and the American Association of Orthopedic Surgeons.

**American Medical Directors Association.** 2003. *Clinical practice guidelines: Falls and fall risk*, 2d ed. Columbia, MD: AMDA.

**American Medical Directors Association.** 2004. Clinical practice guidelines: Osteoporosis, falls and fall risk. Slide presentation in-service. [www.amda.com](http://www.amda.com)

**Lipsitz LA, Burrows A, Kiel D, Kelley-Gagnon M.** 1997. Falls. Morris JN, Lipsitz LA, Murphy KM, Belleville-Taylor P, eds. *Quality care in the nursing home*. St. Louis, MO: Mosby. **Note:** This chapter walks the reader through a step-by-step approach to assessment of persons at risk for falling and provides numerous care planning suggestions.

**MacRae PG, Asplund LA, Schnelle JF, Ouslander JG, Abrahase A, Morris C.** 1996. A walking program for nursing home persons: Effects on walk endurance, physical activity, mobility, and quality of life. *JAGS* 44: 175–80.



- Ray WA, Taylor JA, Meador KG, Thapa PB, Brown AK, Kajihara HK, Davis C, Gideon P, Griffin MR.** 1997. A randomized trial of a consultation service to reduce falls in nursing homes. *JAMA* 278: 557–62.
- Schnelle JF, MacRae PG, Ouslander JG, Simmons SF, Nitta M.** 1995. Functional incidental training, mobility performance, and incontinence care with nursing home persons. *JAGS* 43: 1356–60.
- Tinetti ME, Gordon C, Sogolow E, Lapin P, Bradley EH.** 2006. Fall-risk evaluation and management: Challenges in adopting geriatric care practices. *The Gerontologist* 46: 717–25.

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