ENA INJURY PREVENTION INSTITUTE/EN CARE PRESENTS

Stand Strong for Life

Falls Prevention Program for Older Adults

HEALTHCARE PROFESSIONAL MODULE

ENA
EMERGENCY NURSES ASSOCIATION
INJURY PREVENTION INSTITUTE
EMERGENCY NURSES CARE

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Foreword

Older adults represent an ever-increasing proportion of the U.S. population. In 1990, adults age 65 years and over constituted 4.1% of the U.S. population. By 2000, this percentage had tripled to 12.4%, and the number of adults in this age group grew from 3.1 million to 35 million.[1] The near–elderly population, comprised of those 55–64 years, accounted for 8.6 percent of the U.S. population (24.3 million) in 2000.[2] Together, the near–elderly and the elderly represent a significant and growing portion of the U.S. population. According to the U.S. Census Bureau, by 2020 the population aged 55–64 is projected to be 42.7 million, and those 65 years and over is projected to be 54.6 million.[2]

With the U.S. population aging rapidly, it is likely that the incidence of fall-related injuries and fatalities will continue to increase. Falls are the leading cause of hospital and nursing home admissions and injury-related deaths among older adults.[3,4] Each year, more than one–third of the elderly persons in the U.S. fall,[5-7] and 10 percent of these falls result in injuries that require medical attention.[8-9] In 2004, nearly 2.9 million older adults were treated for non-fatal injuries in hospital emergency departments; the majority of these (1.9 million) were the result of falls.[10] Fall-related injuries in the U.S. cost more than $20 billion each year, and by 2020, the total annual cost of these injuries is expected to reach $32.4 million.[11] By educating health care professionals and older adults about the factors that contribute to falls and how to intervene to prevent falls from occurring, the incidence of falls-related injuries and fatalities can be significantly decreased.

As a visionary organization, the Emergency Nurses Association (ENA) expanded its educational program to include falls prevention presentations for health care providers and community-dwelling older adults in 2001. The falls prevention program was originally included as part of the TAKE CARE I program, which also addressed the topic of safe medication use. Because falls are the leading cause of non-fatal injuries among older adults who are treated in emergency departments, the 2006 revision of the TAKE CARE I program separated the two educational programs. The 2006 revision of the falls prevention program *Stand Strong for Life* includes updated statistics, revised scripts, a new format, and evidence-based interventions such as informational brochures, interactive exercises, and recommendations for referral to needed services (e.g., physical therapy, occupational therapy). If injuries and deaths are to be prevented, information must be disseminated to reveal the extent of the problem, contributing factors, and interventions for prevention.

Emergency nurses everywhere are actively involved in promoting the health of their communities. ENA invites you to be a part of this falls prevention program in order to prevent injuries and fatalities among older adults before they occur.

Preface

This training manual has been developed to provide emergency nurses, other health care professionals, and health and fitness educators with the information they need to educate their communities. The *Stand Strong for Life* program is comprised of two main modules: the health care professional educational module and the community-based educational module. The purpose of the health care professional educational module is to increase health care providers' knowledge of falls incidence, risk factors, screening/assessment methods, community outreach and advocacy, referrals, and evidence-based countermeasures that contribute to reducing falls and fall-related injuries and fatalities. The purpose of the community-based educational module is to increase community-dwelling older adults' knowledge of falls incidence, the severity of fall-related injuries, the different risk factors for falls, and potential countermeasures that contribute to reducing falls and fall-related injuries and fatalities, including skill building exercises (healthy movements, home safety check) and regular access to preventive medicine (medication reviews, blood pressure, vision, and feet and footwear checks, etc.).

The two modules deliver evidence-based and comprehensive information about falls prevention. The *Stand Strong for Life* program encourages health care professionals and health and fitness educators to develop partnerships with key community stakeholders to gain full knowledge of services that are available to older adults in the community and improve referrals to necessary and appropriate services.

It is recommended that healthcare professionals and health and fitness educators assimilate the knowledge included in the Health Care Professional Educational module before they begin to disseminate the *Stand Strong for Life* program to community-dwelling older adults. After the content of this module is mastered, health care professionals and health and fitness educators will be adequately prepared to reach out to their community and to educate the older adult population about falls prevention. The community-based educational module targets older adults and includes age-appropriate content and format and evidence-based activities like healthy movement, home safety check, and feet and footwear check. That module is suitable for presentation in different settings, including senior centers, adult day cares, retirement facilities, nursing homes, shopping malls, and more.

Acknowledgments

The Emergency Nurses Association and its Injury Prevention Institute/EN CARE would like to extend their appreciation to the following members for contributing to the development of the 2006 version of the *Stand Strong for Life* falls prevention program. We are also greatly indebted to others who gave their time, knowledge, and expertise to develop this valuable *Stand Strong for Life* program. The manual was planned, researched, and written by dedicated emergency department nurses and ENA Injury Prevention Institute/EN CARE staff in response to the need for a comprehensive falls prevention program to educate emergency department nurses, other health care professionals, and health educators, as well as community-dwelling older adults.

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Starfish and River Stories

The Starfish and the River stories have inspired and motivated many emergency nurses and other health care professionals involved in injury prevention efforts. To them, the stories capture and depict the source of their motivation.

Starfish Story

Once upon a time, there was a little girl standing on the beach. As she stood on the shore, waves threw starfish onto the sand. As that happened, she threw them back one after another.

A man walked by and watched the little girl throwing the starfish into the water, one at a time. After watching her for a few minutes, he said, "You know, what you're doing makes no sense. You can't possibly keep up with the waves. What you're doing makes no difference at all."

The little girl looked at the man. As she looked at him, another wave threw more starfish onto the beach. She picked one up and threw it back into the water. Then she looked back at the man and said, "It made a difference to that one."

For this reason, the ENA Injury Prevention Institute/EN CARE has adopted the starfish as a reminder of the many lives we touch through our efforts. Injury Prevention volunteers do make a difference…one life at a time.

Adapted by Loren C. Eiseley

The River Story

You know, sometimes it feels like this: There I am standing by the shore of a swiftly flowing river and I hear the cry of a drowning man. So I jump into the river, put my arms around him, pull him to shore, and apply artificial respiration. Just when he begins to breathe, there is another cry for help. So I jump in the river, reach him, pull him to shore, apply artificial respiration, and just as he begins to breathe, there is another cry for help. So back in the river again, reaching, pulling, applying breathing support, and then another yell. Again and again, without end, goes the sequence. You know, I am so busy jumping in, pulling them to shore and applying respiration that I have no time to see who in the hell is upstream pushing them all in."

Irving Zola

How to Use the *Stand Strong for Life* Intervention

Description, Goals, and Objectives of the *Stand Strong for Life* Intervention

The *Stand Strong for Life* intervention targets audiences such as 1) nurses, other health care professionals, and health and fitness educators interested in educating the public and their peers about falls prevention; and 2) community–dwelling older adults, their family members, and friends.

Module I: Health Care Professional Educational Module

Target Audience

1. Nurses, other health care professionals, health and fitness educators

This module is intended to be used by health care professionals and health and fitness educators as a **self-study guide and/or to educate** peers interested in learning about and advocating for falls prevention in their community. Health care professionals and health and fitness educators are encouraged to use the material included in the Health Care Professional module to teach their peers.

"Health care professionals and health and fitness educators are encouraged to use the material included in the Health Care Professional Education Module and PowerPoint presentation to teach falls prevention to their peers."

Module Material

1. *Stand Strong for Life:* Health Care Professional Educational Module
2. *Stand Strong for Life*: Health Care Professional Module PowerPoint presentation

Goals

Individual Level

Goal 1: To increase health care professionals' knowledge about fall-related issues and prevention interventions among older adults

Goal 2: To increase the number of health care professionals who educate older adults about fall prevention using the *Stand Strong for Life* intervention

Organizational Level

Goal 3: To increase the number of health care professionals who complete training for fall prevention among older adults

Goal 4: To increase the number of emergency departments, hospitals, and senior living facilities that implement falls prevention initiatives

Goal 5: To increase the number of older adults who receive fall-risk assessments when presenting to the emergency department or upon hospital admission

Community Level

Goal 6: To reduce the number of falls among older adults in emergency departments, hospitals, and senior living facilities

Goal 7: To increase community partnerships among health, aging, transportation, planning, and environmental organizations within the public and private sectors in order to increase falls prevention among community–dwelling older adults

Module II: Community-Based Module

Target Audience

1. Community-dwelling older adults at medium and high risk for falls
2. Older adults living in retirement communities, assisted-living communities, nursing homes, etc. who are at medium and high risk for falls
3. Older adults who are at medium and high risk for falls who present to an emergency department or are admitted to a hospital

Module Material

1. *Stand Strong for Life*: Community-Based Educational Module PowerPoint presentation

2. Four brochures:
   a. *Check for Safety: A Home Fall Prevention Checklist for Older Adults* (CDC)
   b. *What You Can Do to Prevent Falls* (CDC)
   c. *Healthy Movements* (Adapted from material provided by Roberta Newton, PhD, PT, from Temple University)
   d. *Foot and Footwear Check* (Adapted from material provided by Roberta Newton, PhD, PT, from Temple University)

Goals

Individual Level

Goal 1: To improve older adults' knowledge about their increased risks for falls
Goal 2: To increase older adults' knowledge about how to prevent falls from occurring

Organizational level

Goal 3: To increase the number of senior living facilities that implement falls prevention initiatives

Community Level

Goal 4: To reduce the number of risk factors for falls in older adults' homes
Goal 5: To increase the practice of fall-prevention activities among older adults
Goal 6: To reduce the number of risk factors for falls in older adults' communities
Goal 7: To reduce the number of falls among older adults
Goal 8: To reduce the severity of injuries related to falls among older adults
Goal 9: To increase community partnerships among health, aging, transportation, planning, and environmental organizations within the public and private sector to increase falls prevention among community-dwelling older adults

Core Elements of the *Stand Strong for Life* Intervention

- *Fall-Risk Assessment (History of falls)*
- *Medication review*
- *Physical exercises (Balance, gait, and muscle strength)*
- *Vision check*
- *Foot and footwear check (Podiatric problems and type and condition of footwear)*
- *Home safety check*

In addition to those core elements, in-hospital and outdoor safety measures will also be discussed in this module.

Settings

The core elements (intervention points) of the *Stand Strong for Life* intervention differ when implemented to community-dwelling older adults (when presenting to a group of older adults in the community) and when implemented in the emergency department/hospital/senior living facility setting (when the fall prevention program is institutionalized) (see Figures 1 and 2).

The first step of the intervention is to educate all health care professionals (classroom setting or self-study) for both the implementation of the intervention in the community or in the emergency department, hospital, or senior living community facility setting. There are differences in how and when fall-risk assessments are conducted depending on the setting. For instance, at a presentation in the community, fall risk assessment takes place at the beginning of a *Stand Strong for Life* presentation. The same assessment can take place at triage, for example, when visiting the emergency department, during the admission process when admitted to a hospital, or when moving into a senior living community. The fall risk assessment can be done in less than three minutes using one of the validated screening tools introduced on page 16.

Figure 1. Community Setting Presentation/Intervention Model

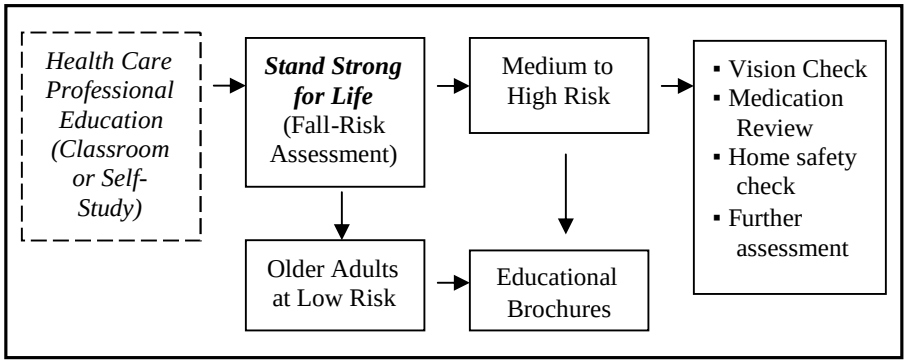
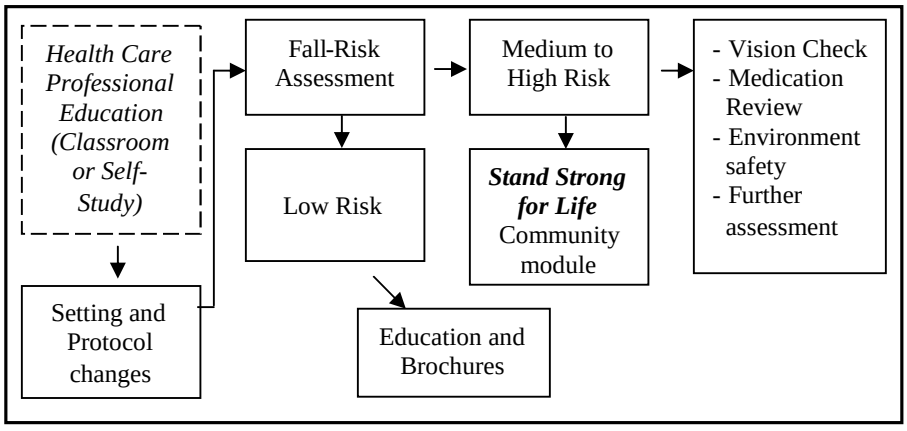


Figure 2. ED/Hospital/Senior Living Communities Intervention Model



As referred to in Figure 1, the fall prevention intervention can be implemented in the community at senior living communities, churches, and nursing homes, for example. This intervention model's vehicle is implemented through live presentations, by a health care professional or health educator, to an audience of older adults at their place of residence or where they gather to socialize or worship, for instance.

Stand Strong for Life can also be implemented in emergency departments, hospitals, senior living communities, nursing homes, adult day cares, etc. That intervention model is internally implemented by institutions and conducted by all health care professionals at those institutions. Fall prevention protocols are developed (e.g., refer to *Stand Strong for Life* presentation, routine fall-risk assessment, vision and feet checkup, medication review, and education on home safety, footwear check, and physical activity) and environmental changes (e.g., lower beds, bed alarms) may be required to reduce the risk of falls among older adults inside institutions.

Depending on which setting the falls prevention intervention is implemented, the intervention strategies, the activities that address them, and the sequence of events will vary. The Intervention Summary Table on page 12 complements the information provided in Figures 1 and 2 and illustrates the different interventions, and corresponding activities.

Settings	Risk Factors	Interventions	Implementation Activities
Community Presentation ***Stand Strong for Life***	Previous Falls	Fall-Risk Assessment (*conducted before the presentation*)	▪ Complete screening before presentation begins ▪ Refer to primary care provider or community and home health services, if needed
	Visual Impairment	Vision Check	▪ Educate older adults ▪ Refer to a primary care provider for checkup
	Polypharmacy	Medication Review	▪ Educate older adults ▪ Refer to a primary care provider or pharmacist ▪ Distribute ***Safe medication card***
	Reduced balance, gait, and muscle strength	Physical Activity	▪ Educate older adults ▪ Distribute ***Healthy Movements*** brochure ▪ Practice ***Healthy Movements*** ▪ Distribute *Health Calendar Contract* ▪ Refer to a primary care provider or community and home health services, if needed
	Unsafe Home Environment	Home Safety Check	▪ Educate older adults ▪ Distribute ***Check for Safety: A Home Fall Prevention Checklist for Older Adults*** brochure ▪ Refer to community and home health services, if needed
	Podiatric Problems Inadequate footwear	Feet and Footwear Check	▪ Educate older adults ▪ Distribute ***Foot and Footwear Check*** brochure ▪ Refer to primary care physician and home health services, if needed
Emergency Department/ Hospital/ Senior Living Facility	Previous Falls	Fall-Risk Assessment	▪ Complete screening ▪ Refer to primary care provider or community and home health services, if needed ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Visual Impairment	Vision Check	▪ Educate older adults ▪ Refer to a primary care provider for checkup ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Polypharmacy	Medication Review	▪ Educate older adults ▪ Refer to a primary care provider or pharmacist ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Distribute ***Safe medication card***
	Reduced balance, gait, and muscle strength	Physical Activity	▪ Educate older adults ▪ Distribute ***Healthy Movements*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Unsafe Home Environment	Home Safety Check	▪ Educate older adults ▪ Distribute ***Check for Safety: A Home Fall Prevention Checklist for Older Adults*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Refer to community and home health services, if needed
	Podiatric Problems Inadequate footwear	Feet and Footwear Check	▪ Educate older adults ▪ Distribute ***Foot and Footwear Check*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Refer to primary care physician and home health services, if needed
All settings	All	General Educational Information	▪ Distribute the ***What You Can Do to Prevent Falls*** brochure to all older adults

The following sections will discuss the incidence, causes, and impact of falls among older adults, the risk factors for falls, and how to reduce older adults' exposure to the risk factors.

Health Care Professional Educational Module

Definition of a Fall

A fall is any event in which a person unintentionally comes to rest on the ground or another lower level such as a chair, toilet, or bed.[12]

Scope of the Problem

Falls are the leading cause of hospital and nursing home admissions as well as injury-related deaths among older adults.[3,4] Each year, more than one-third of the elderly persons in the U.S. fall.[5-9] Nearly half of falls among older adults occur in or around their homes. In 2004, nearly 2.9 million older adults were treated for non-fatal injuries in hospital emergency departments; the majority of these (1.9 million) were the result of falls.[10] Of those who fall, 20% to 30% suffer moderate to severe injuries, such as hip fractures or head traumas that reduce mobility and independence and increase the risk of premature death.[13] As many as 50% of older patients requiring hospitalization after a fall die within one year.[9] In 2003, nearly 13,820 people ages 65 and older died from fall-related injuries; of those, approximately 50% were age 85 and older.[10] The U.S. Public Health Services estimates that two-thirds of the deaths associated with a fall are preventable.[14]

"Nearly half of falls among older adults occur in or around their homes."

In-Hospital Falls

The literature on inpatient falls specific to acute care hospitals is surprisingly limited. It has been suggested that more research in this area is required in order to produce strong evidence that particular interventions are successful. Even though there is limited information, it is important to point out the incidence, the age-group most at risk, the risk factors for falls, and the potential preventive interventions in the hospital setting. Just like in the community, a combination of factors influences patients' risk for falls. Researchers have found that most in-hospital falls occurred among individuals who are over 55 years of age, without assistance (79%), while in their room (85%), during the evening or overnight (59%).[15,16] In Hitcho and colleagues' study, half of the falls were elimination related.[15] In that study, the most common location of patient falls was at the bed side while transferring to or from a bed or chair.[17] Other researchers identified patient risk factors for falls such as mental status, history of falls, medications, special toileting needs, attachment to equipment (IVs, oxygen, etc.), postural hypotension, vision, decreased peripheral sensation, and poor mobility as risk factors for falls among patients.[17] Hospital falls often result in increased duration of stay in hospital and higher rate of discharge to residential or nursing home care.[18]

Different interventions have been implemented in different settings. An example of an intervention that has shown to be effective in reducing in-hospital falls (22% over six years) consisted of: using a fall risk assessment tool, the Hendrich Fall Risk Model (see on p. 16); the development of a checklist of interventions to be used for patients at high risk for falls; provision of mandatory, house-wide nursing education; and implementation of a committee to focus on fall prevention. In addition to staff

education, mandatory interventions included: communication alerts that signified the high fall risk status, keeping the bed in its lowest position, arming the bed-exit alarm whenever the patient was in bed, physician or pharmacist review of medications, and providing patient/family education.[16] Other factors to consider are proper lighting, non slippery floors, and overall environment patient safety. When it comes to the use of mechanical restraints, the literature varies from setting to setting. For example, some data from studies conducted among skilled nursing facilities patients showed that mechanical restraints were associated with continued, and perhaps increased, occurrence of serious fall-related injuries.[19,20] On the other hand, it was found that restraint use may decrease the severity of injury sustained in a fall.[20]

Costs of Fall-Related Injuries

Adverse outcomes go well beyond the injuries sustained as a result of a fall. Fall-related injuries in the U.S. cost more than $20 billion each year, and by 2020, the total annual cost of these injuries is expected to reach $32.4 million.[21] The cost of fall-related injuries is often expressed in terms of direct costs, including out-of-pocket expenses such as hospital and nursing home care, physician and other professional services, rehabilitation, community-based services, use of medical equipment, prescription drugs, local rehabilitation, home modifications, and insurance administration.[22] Direct costs do not account for the long-term consequences of these injuries, such as disability, decreased productivity, or reduced quality of life.[22]

"Fall-related injuries in the U.S. cost more than $20 billion each year."

Causes of Falls

It has been helpful for some to classify falls based on environmental as well as physiologic factors as a way to better understand their causes. One approach, presented by researcher Janice Morse, suggests that falls be classified as accidental, unanticipated physiologic, or anticipated physiologic, as defined below. **Accidental falls** occur when patients fall unintentionally. For example, they may trip, slip, or fall because of a failure of equipment or by environmental factors such as spilled water or urine on the floor. **Unanticipated physiologic falls** occur when the physical cause of the falls is not reflected in the patient's risk factor for falls. A fall in one of these patients is caused by physical conditions that cannot be predicted until the patient falls. For example, the fall may be due to fainting, a seizure, or a pathological fracture of the hip. **Anticipated physiologic falls** occur in patients whose score on risk assessment scales (e.g. Morse Fall Scale [MFS]) indicates that they are at risk of falling. According to the MFS, these patients have some of the following characteristics: a prior fall, weak or impaired gait, use of a walking aid, intravenous access, or impaired mental status.[23]

"Falls among older adults are usually not the result of a single factor but rather a combination of both internal and external factors."

Risk Factors or Etiology

Falls among older adults are usually not the result of a single factor, but rather a combination of both internal and external factors.[24] Tideiksaar defines internal risk factors as being "integral to the patient's system, many of which are associated with age-related changes." External risk factors are defined as "external to the system and relating to the physical environment."[25] The most recognized internal risk factors that predispose older adults to fall are previous falls, visual impairment, hearing impairment, cognitive impairment, reduced balance, gait and muscle strength, cardiovascular diseases, medications and alcohol, nutritional deficiencies, chronic

degenerative diseases (e.g., osteoporosis, arthritis, etc.), podiatric problems, urinary incontinence, and fear of falling.[22-30] External risk factors are divided into in-home risk factors and outdoor risk factors. The most recognized in-home external risk factors that predispose older adults to fall are slippery flooring and carpeting, use of throw rugs, inadequate furniture design and position, poor lighting, lack of equipment in bathroom and bathtub, lack of handrails, clutter, cluttered stairs and steps, type and condition of footwear, and lack of and inadequate assistive devices.[22,25] Finally, outdoor risk factors are uneven sidewalks, terrain, or curbs, lack of or structurally unsecured handrails, hazardous materials (e.g., snow, ice, water, mud, oil spills), and poor lighting.

Internal Risk Factors
- Previous falls
- Visual, hearing, and cognitive impairment
- Balance, gait, and muscle strength
- Cardiovascular diseases
- Medications and alcohol use
- Nutritional deficiencies
- Chronic degenerative diseases
- Podiatric problems
- Urinary incontinence
- Fear of falling

Some of the risk factors for falls may be categorized as internal factors by some researchers and clinicians and as external factors by others. Medications and alcohol, for example, can be considered external factors because they do not effect a person's abilities if they are not ingested – they are not associated with naturally occurring age-related processes. Other researchers and clinicians consider medications and alcohol as internal risk factors for falls because of the side-effects (e.g., dizziness, drowsiness, low blood pressure) and increased risk for falls that occur when ingested.[31,32] In this falls prevention program, medications and alcohol will be considered internal risk factors for falls.

How Can You Prevent Falls From Occurring?

As a health care professional or health educator, you may encounter numerous fall-related injuries among older adults in your emergency department, hospital, retirement community, nursing home, and senior center. How can you help prevent those falls from occurring in the first place? The goal of a falls prevention program is to reduce the number of risk factors for falls. As you have just reviewed, falls among older adults are usually not the result of a single factor, but rather a combination of both internal and external factors. Therefore, the most effective interventions to prevent falls incorporate multiple elements that address a combination of risk factors. These types of interventions are called multifaceted or multilevel interventions.

External Risk Factors
In-Home Factors
- Slippery flooring and carpeting
- Use of throw rugs
- Inadequate furnishing design and position
- Poor lighting
- Lack of equipment in bathroom and bathtub
- Lack of handrails
- Clutter
- Cluttered stairs and steps
- Type and condition of footwear
- Lack of and inadequate assistive devices

The *Stand Strong for Life* intervention (community-based module) focuses on six core elements: **falls-risk assessment**; **physical activity** to increase strength, balance and gait, and flexibility; referral of older adults to a primary health care provider (PCP) for **vision** check-up and **medication** review; education of older adults and family members on importance of **foot and footwear check** and on purchasing of adequate footwear; and education of older adults and family members on how to conduct a **home safety check**. In addition, older adults and family members are taught how to properly use adequate assistive devices.

Previous Falls

Many studies have cited a history of falls as a significant factor associated with patients being more likely to fall again. In fact, older adults who have previously fallen or who stumble frequently are two to three times more likely to fall within the next year.[9,25,33] Further, previous falls often lead to fear of falling, which in itself may lead to inactivity and loss of self-confidence. Without being active, the balance, gait, and muscle strength decreases, the potential for cardiovascular diseases increases,

and the risk of falls increases.[27] Therefore, as part of the falls prevention intervention, it is recommended to assess older adults' physiological risk for falls[34] using assessment tools such as the Morse Fall Scale (see p. 39), the Falls Risk Assessment Tool (see p. 41), or the Hendrich II Fall Risk Scale. If you already use a fall-risk assessment tool, simply evaluate which one is most effective based on the information provided below.

- The Morse Fall Scale (MFS) is a rapid and simple method of assessing a patient's likelihood of falling. A large majority of nurses (82.9%) rate the scale as "quick and easy to use," and 54% estimated that it took less than three minutes to rate a patient. The MFS is used widely in acute care settings, both in the hospital and in long term care inpatient settings.[35] The MFS can also be retrieved from the Internet at the following Web site: http://www.nursing.upenn.edu/centers/hcgne/gero_tips/PDF_files/Morse_Fall_Scale.htm.

- The Fall Risk Assessment: Hendrich II Scale is intended to be used in the acute care and the skilled nursing environment, including emergency department, rehabilitation, and behavioral care areas, to identify adults at risk for falls. It is quick to administer and provides a determination of risk for falling based on mental status, emotional status, symptoms of dizziness, gender, and is inclusive of categories of medications that are known to increase risk for falls among older adults.[36] This assessment tool can be retrieved from The Hartford Institute for Geriatric Nursing Web site, GeronurseOnline at http://www.hartfordign.org/publications/trythis/issue08.pdf.

- Fall Assessment Tool from Barbara Resnick in her book *Preventing Falls in Acute Care Geriatric Nursing Protocols for Best Practice* (see page 41).

➲ Depending on the setting where *Stand Strong for Life* is implemented, the fall-risk assessment needs to be performed according to the guidelines below. You can refer to Figures 1 and 2 on page 10 which outlines the process for both community presentations and acute care settings.

➲ *Community Presentation*

Once the initial fall-risk assessment is completed and all older adults' individual risk for falls is determined, the presenter moves on to presenting the content of the PowerPoint presentation and the four accompanying brochures to all attendees. At the end of the session, the presenter approaches older adults who scored medium or high risk for falls and strongly encourages them to make an appointment with a primary care physician (for vision check, medication review, feet condition, overall medical examination) and a physical therapist (for gait and balance assessment). It is possible that some of the older adults at medium and high risk for falls will not have access to a primary care physician or a physical therapist. In this case, knowledge about the different community and home health services available to older adults in your community becomes very helpful. As listed in the Geriatric Emergency Nursing Education (GENE) course, different types of home health services that exist for older adults are gait training, ADL retraining, therapeutic exercise for strengthening and endurance, cardiac status management, and blood pressure checks. It is also important to inform your local

ED/Hospital/Facility Factors
- Transfer to or from a bed or chair
- Bed height
- Attachment to equipment
- Slippery floors
- Lack of assistive devices
- Clutter, tripping hazard
- Unreachable bell, side table
- Poor lighting
- Mechanical restraints

Outdoor Factors
- Uneven sidewalks, terrain, or curbs
- Lack of or structurally unsecured handrails
- Hazardous materials
- Poor lighting

➲ ***Key Point:*** *Stand Strong for Life community-based module - points of intervention:*
- *Falls-Risk Assessment*
- *Vision check*
- *Medication review*
- *Physical exercises*
- *Home safety check*
- *Foot and footwear check*

emergency departments, primary care physicians, nurse practitioners and other health care professionals about the intervention so that they can also screen and refer older adults to your *Stand Strong for Life* presentations.

➲ *Emergency Department/Hospital/Senior Living Facility*

Fall-risk assessment can be completed at triage in the emergency department setting, during admission to a hospital, or when an older adult moves into a senior living facility. Older patients whose screening results show that they are at medium or high risk for falls should be referred for further assessment with a primary care physician, a physical therapist, or any member of your multidisciplinary team of health care professionals who are involved in falls prevention. Those older patients are also encouraged to attend a *Stand Strong for Life* presentation. For this step to happen, it is important that you develop a collaborative relationship with your emergency department, local emergency departments, hospitals, and senior living facilities in order for them to refer older adults to your *Stand Strong for Life* presentation.

"The goal of a fall prevention program is to reduce the number of risk factors."

Visual Impairment

The most basic visual problem that increases with age is poor visual acuity. As Dr. Roberta Newton mentions, "be aware that either old prescriptions or new prescriptions can alter the visual field and cause falls."[27] Older adults experience decreased night vision, altered depth perception, decline in peripheral vision and glare intolerance.[25,37] It is easy to understand that stairs, carpets with patterns, and curbs, for example, are risk factors for older adults who experience a decline in depth perception. The person may have difficulty estimating the height of the step or curb, and therefore, misplace the foot. Or, the person may think that the carpet or sidewalk is uneven and alter balance and gait to accommodate the misperception.[27]

➲ ***Key Point:*** *Educate older adults about the importance of having regular* ***vision checks*** *and a* ***medication review*** *done with primary care physician or pharmacist*

➲ Therefore, it is recommended that older adults get regular eye examinations.

Polypharmacy

Medications that affect the central nervous system, especially psychoactive medicines such as sedatives, tranquilizers, and benzodiazepines, are risk factors for falls.[25,32] The number of administered or prescribed medications taken (polypharmacy) also acts as a risk factor for falls. The rule of thumb is that the combination of four or more medications is a risk factor for falls.[25,27] It is also important to consider the number and types of over-the-counter medication that an older adult takes.

"Four or more medications is a risk factor for falls."

A physician or pharmacist's review of both prescription and over-the-counter medications can be helpful in reducing falls, as it may possibly reduce side effects and interactions by decreasing the number of medications prescribed.[37] Frequently, eliminating a medication, altering the dosage, or switching to alternative medications without compromising patient care can markedly affect the risk of falling. Medication management strategies should include initial and annual review of all medications and associated risk of falls, appropriate change as warranted to reduce risk of falls, education of the patient and family regarding appropriate regime and possible side affects related to the risk of falling, and timely follow-up to assess the impact of the medication adjustments.[38]

- As indicated in Figures 1 and 2, it is recommended to refer older adults with medium and high risk for falls to a primary care provider or a pharmacist to have their medications reviewed.

- In addition, it is suggested that ***Safe Medication Cards*** be distributed to all older adults, family members, and friends who participate in a community presentation of *Stand Strong for Life* or visit the emergency department or other health care settings. The Emergency Nurses Association has developed a medication card that can be obtained by contacting the Association's Member Services Department.

- *Emergency Department/Hospital/Senior Living Facility*

  Older adults who screen at medium or high risk for falls during a visit to an emergency department, hospital, or live at a senior living facility should be referred to attend the *Stand Strong for Life* presentation.

➲ ***Presentation Tip:*** *Obtain* ***Safe Medication Cards*** *from ENA to distribute to participating older adults and attendees.*

<u>*Reduced Balance, Gait, and Muscle Strength*</u>

Regular physical activity has been shown to reduce the morbidity and mortality from many chronic diseases (e.g., coronary heart disease, diabetes, obesity, colon cancer, high blood pressure), reduce feelings of depression and anxiety, improve psychological well-being, and improve older adults' strength and mobility.[39] Despite the significant benefits of physical activity, a national survey shows that older adults tend to avoid physical activity, particularly at older ages, with less than 25% of older adults exercising regularly.[40]

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The effects of the lack of physical activity, combined with naturally occurring loss of muscle strength and flexibility, increase the risk of falls among older adults. By age 65, a 20% decrease in strength usually occurs. Losses in muscle strength are even greater after age 70, with declines of approximately 15% in the 6th and 7th decade and about 30% thereafter.[41,42] The loss of strength that accompanies advancing age and inactivity is problematic in that adequate strength is necessary for even the most basic activities of daily living, to participate in social activities such as traveling or dancing, and to continue with hobbies.[43] Lower body strength is associated with an impaired ability to walk and an increased risk of falls.[44] Flexibility has been shown to deteriorate by 20% to 30% between twenty and seventy years, with further reductions occurring by the age of 80.[45] A lack of flexibility is associated with poor performance in a variety of activities of daily living, including bending, stooping, reaching up, boarding public transportation, stair-climbing ability, and self-care activities.[41]

"Older adults who engage in regular physical activity increase the likelihood that they will extend their years of active independent life, reduce disability, and improve their quality life in midlife and beyond."

Exercise is recommended for improving muscle strength, flexibility, and balance. It is important to mention that physical exercise does not only refer to structured exercises in a gym, but also includes routine activities such as walking, sweeping, gardening, Tai Chi, Yoga, or personal care activities. For example, a study of people age 70 and older living in the community, found that a 15-week Tai Chi program reduced the fear of falling and cut the risk of multiple falls nearly in half.[46] Older adults who engage in regular physical activity increase the likelihood they will extend their years of active independent life, reduce disability, and improve their quality of life in midlife and beyond.[40,47] The American College of Sports Medicine, the Centers for Disease Control and Prevention, and the National Institutes of Health

recommend that older adults engage in 30 minutes of moderate physical activity most days of the week. This activity should incorporate aerobic activity (such as walking, dancing, swimming, biking), resistance training, balance, and flexibility.[48] A brief list of links where age-appropriate exercises can be found is included on page 33.

➲ *Community Presentation*

As part of the community presentation of the *Stand Strong for Life* intervention, it is recommended to **demonstrate** and **practice** movements in the ***Healthy Movements*** brochure (on CD-ROM) with older participants (on CD-ROM). Then, it is recommended that older adults practice the series of movements at least three to four times per week.

➲ *Emergency Department/Hospital/Senior Living Facility*

It is recommended to educate older adults about the benefits of physical activities and to give them a copy of the ***Healthy Movements*** brochure.

➲ ***Key Point:*** *Demonstrate the* ***Healthy Movements*** *brochure and encourage high risk older adults to practice movements at home.*

➲ *All Settings:*

The ***Healthy Movements*** brochure should be printed and distributed to all participating older adults, family members, friends, and fitness and wellness experts.

Many factors influence older adults' motivation to stay physically active. The most important factors are physical and emotional benefits of physical activity, successful performance, individualized care, social support, appropriate environment, clear goals, addressing unpleasant physical sensations, and making exercise **fun** and **different**.[48] Other activities are listed in the resources section on page 35.

"Make sure that you make the practice of the exercises a fun event."

<u>*Unsafe Home Environment*</u>

As previously mentioned, nearly half of falls among older adults occur in or around their homes.[10] It is therefore important to reduce older adults' exposure to risk factors like slippery flooring and carpeting, use of throw rugs, inadequate furnishing design and position, poor lighting, lack of equipment in bathroom and bathtub, lack of handrails, clutter, cluttered stairs and steps, inappropriate type of footwear, and improper use of and inadequate assistive devices.[22,25] In an attempt to reduce home hazards, the Centers for Disease Control and Prevention (CDC) developed a brochure entitled ***Check for Safety: A Home Fall Prevention Checklist for Older Adults***.

➲ ***Key Point:*** *Review with all attendees the material included in* ***Check for Safety: A Home Fall Prevention Checklist for Older Adults***.

➲ The brochure is included as part of the *Stand Strong for Life* program. As a presenter, you need to print the brochure (from CD-ROM) or order it from the CDC to distribute it to all participating older adults, family members, or friends.

➲ Similarly, it is recommended that you distribute the ***Check for Safety: A Home Fall Prevention Checklist for Older Adults*** brochure to all older adults who present to the ED, move to senior living facility, or are discharged from the hospital.

- During your presentation or screening, review the content of the brochure and encourage attendees to read the information a few more times when they get home.

When it comes to outdoors environment, it is important to be aware of uneven sidewalks, terrain, or curbs that require repair; overall poor lighting; lack of or not structurally secure handrails; and hazardous materials like gravel and debris on sidewalks. In general, it is recommended that older adults who walk in crowded areas should increase the use of assistive devices and protectively plan to stay near walls.[27]

"Nearly 75% of older adults have some type of foot and ankle problems that may put them at greater risk for falls."

Podiatric Problems

A study conducted by Dunn and colleagues identified that nearly 75% of older adults have some type of foot and ankle problems varying from toenail disorders, lesser toe deformities, corns and calluses, bunions, and signs of fungal infection, cracks/fissures, or maceration between toes.[49] Approximately 31% of the older adults had some tenderness to palpation of the foot or ankle, and 15% had ankle joint pain on most days in the past four weeks.[41] Another study showed that the presence of specific foot conditions impaired performance in a balance test and in some functional tests. In particular, older people with foot pain performed worse in a leaning balance test, stair ascent and descent, an alternate step-up test, and a timed six-meter walk.[50] In other words, foot pain can increase the risk for falls. Another risk factor that may potentially increase the risk for falls is decreased sensation in the feet.[21] As Newton mentions, decreased sensation may be more important in older persons who have diabetes, but gradually occurs with the aging process. Sensation can be tested on the person using a Q-tip® or something soft.[28]

➲ ***Presentation Tip:*** *The **Foot and Footwear Check** brochure should be reviewed and distributed to older adults, their family members, and health educators. Reinforce the importance to complete regular foot and footwear checks.*

Inadequate Type or Condition of Footwear

In addition to checking older adults' feet, it is important to assess their footwear. Proper shoes can lead to pain-free mobility, can reduce the potential for some foot problems, can help the individual stay active, and may reduce the risk for falls.[27] Important criteria like the pattern and slipperiness of the soles, financial ability to own more than one pair of shoes, swelling of feet, length and wideness of feet, cushioning of the soles, and height of heels need to be considered in selecting appropriate footwear.[29]

- *All Settings*

  In an attempt to reduce risk factors related to feet conditions and inadequate footwear, it is recommended that you review the content of the brochure entitled ***Foot and Footwear Check*** with all older adults that either participate in the intervention (community presentation) or visit the emergency department.

- The ***Foot and Footwear Check*** brochure is on the CD-ROM. It should be printed and distributed to all participating older adults and attendees.

- Print or order the brochure ***What You Can Do to Prevent Falls*** and distribute it to all older adults and attendees. A series of four posters in English, Spanish, and Chinese entitled ***What You Can Do to Prevent Falls*** can be obtained from the Centers for Disease Control and Prevention (CDC) at http://www.cdc.gov/ncipc/pub-res/toolkit/brochures.htm.

Other Important Factors to Consider

➲ *Another brochure and four posters entitled **What You Can Do To Prevent Falls** are available on the CDC Web site.*

Lack of and Inadequate Use of Assistive Devices

Interventions to prevent falls among older adults have never shown to completely eliminate falls among older adults, but in addition to reducing the incidence of falls, prevention strategies have also shown to reduce the severity of injury sustained in cases when falls occur.[36,51,52] For example, 11 independent randomized trials conducted in nursing or residential care settings showed statistically significant evidence in reduction in hip fracture incidence among older adults who wore hip protectors.[50] Canes and walkers should always be properly fitted and be in good condition.

Unfortunately, despite the general consensus on the advantages of using assistive devices to maintain independence and autonomy, many older adults who are at high risk for falls do not express the need to use such devices. Comments obtained from a focus group comprised of older adults revealed that strong negative sociocultural values towards aging and the identification of canes and walkers as symbols of frailty and lost function were barriers to the use of assistive devices.[52] In addition, adherence and acceptance to hip protectors is poor among older adults as they find the device uncomfortable and unpractical.[51] Therefore, Childress suggests that an approach to promote the use of assistive devices should be a non-medical and non-disability approach.[53]

➲ ***Key Point:*** *Educate older adults about the importance of assistive devices. Attempt to de-stigmatize their use.*

➲ As part of the *Stand Strong for Life* intervention, it is recommended that you educate older adults about the importance of assistive devices in the prevention of falls and fall-related injuries. Strong social stigmas associated with the use of such devices needs to be considered in the discussion. It may be a good idea to think about ways to make the use of assistive devices a fun, and at the same time safe, habit. For example, some individuals personalize their cane or walker with decals and other decorations.

Home/Environmental Modification

Home modifications are adaptations to the living environment intended to increase ease of use of household surroundings, safety, security, and independence. Modifications can include: 1) changes or additions to the structure (e.g., widening doorways, adding a first floor bathroom, or a ramp); 2) installing special equipment (e.g., grab bars and handrails); and 3) adjusting the location of items (e.g., moving furniture). Home modifications overlap considerably with assistive devices (e.g., bath benches, walkers) which tend to be more mobile in nature and not attached to the structure of the house. In addition, home modifications are often accompanied by repairs (e.g., fixing worn-out stairs) to insure their usefulness and safety.[54]

➲ ***Key Point:*** *Be mindful of older adults' "cognitive maps" when recommending home modifications.*

Addressing environmental hazards at home can be an effective way to reduce falls since more than half of the falls occur in or around the home and most fall-related injuries are due to tripping while walking, as opposed to falling down a flight of stairs. A home safety check and making needed modifications are methods to reduce the number of external risk factors (slippery flooring and carpeting, use of throw rugs, inadequate furniture design and position, poor lighting, lack of equipment in bathroom and bathtub, lack of handrails, clutter, and cluttered stairs and steps). According to Newton, when recommending changes, cost and desire to change are

two factors to consider. Inside the home, moving furniture generally is not recommended unless it poses a definite fall-risk hazard. We have "cognitive maps" of our environment. We are able to maneuver in our home environment with our eyes closed. Do not recommend that older adults rearrange furniture unless absolutely necessary. This is because when furniture is moved, it takes time to develop a new cognitive map.[27]

- Some older adults may be interested in making some home modifications, but cannot do it alone or cannot afford the costs related to such modification. Make sure to be aware of the resources and services available to community-dwelling older adults. Some of these resources may provide inexpensive services when needed.

Nutrition

The poor diets of older adults are undoubtedly having a negative impact on their health. Older adults are more likely than younger ones to have a variety of chronic conditions that can be exacerbated by poor nutritional habits, thus contributing to declining health.[55] The prevalence of obesity among older adults increased from approximately 12% in 1990 to 19% in 2002. People who are overweight or obese increase their risk for development or exacerbating cardiovascular disease, diabetes, high blood pressure, arthritis-related disabilities, and some cancers. Other older adults, especially the very old, consume inadequate amounts of key nutrients such as calcium, vitamin D, magnesium, and phosphorus, which are associated with structural and muscular function and play key roles in maintaining muscle function and bone health.[50,55] Dietary problems are associated with the development of osteoporosis, which is the major cause of bone fractures in older adults – fractures that are often precipitated by falls.[54] Therefore, proper nutrition is very important in preventing falls and the severity of falls-related injuries when falls occur.[56]

If you want to learn more about assessing nutrition in older adults, you can download the Mini Nutritional Assessment tool (MNA) from The Hartford Institute for Geriatric Nursing at http://www.hartfordign.org/publications/trythis/issue_9.pdf. The MNA is an assessment tool that can be used to identify older adults (> 65 years) who are at risk of malnutrition. It is a clinician-completed instrument with two components: screening and assessment.

- **How to Get Up From the Floor**

  While presenting the *Stand Strong for Life* program to community-dwelling older adults or when educating older patients in the emergency department, it is important to educate older adults how to get up from the floor when falls occur. According to Newton, "If no one is available to call for assistance, then the person may have to get up on own or move to a different location to call for assistance. Before moving, the person should be aware if anything hurts or is possibly broken. Then move along the floor to a stable piece of furniture such as a chair or sofa. Using the object as a support, first move into a side-sitting position. If need be, rest a few minutes, then kneel using the object as support. Then put one foot flat on the floor and push up into the chair. This last step is probably the hardest because of the strength required to do this movement. Once in the chair, the person should probably rest."[27]

Keeping Older Adults Engaged

Older adults not only need help in getting started, but also in maintaining their involvement in healthy practices. For example, it has been found that somewhere between 22% and 76% of those who start exercise programs drop out within six months. Continuing motivational techniques such as a mass media campaign, personal communication with healthcare providers, peer support, and regular reminders encourage older adults to maintain healthy behaviors.[55] When it comes to media campaigns, **motivational messages that** have the following characteristics: they show ordinary people doing ordinary things; they provide concrete, specific information (e.g., engage in brisk walking at least 30 minutes a day, five days a week; strive for five servings of fruits and vegetables a day); they recognize obstacles that people face; and they use the family as a key motivator.[55] Within the area of physical activity, **messages that do not motivate** include those that make exercise look like work (using words like "exercise" or "fitness"), those that remind older adults about their age, and those that are confrontational or that challenge older adults to "get off the couch."[54] Also, because many older adults were raised in an era when society expected individuals to "slow down" with age, it may be easier to persuade older adults to begin with relatively moderate intensity activities (e.g., ***Healthy Movements*** brochure, walking, and yoga).

➲ ***Key Point:*** *A commonly used reminder and motivational tool in the field of aging is the health calendar contract..*

Regular reminders can also encourage older adults to engage in healthy behaviors. A substantial body of evidence concluded that telephone counseling programs are effective in promoting long-term physical activity change for instance.[55] Health calendars can also be effective in increasing older adults' self-confidence and skill level in accomplishing specific and realistic health goals.[57] Such techniques can easily be implemented in the community setting. For example, as illustrated in Figure 2, one older woman was interested in increasing the number of brisk walks she takes per week. She normally takes three brisk walks a week (as indicated by BW). Her goal is to take a brisk walk (at about two times her normal leisure walking speed) five days a week over the next four weeks. She noted the additional walks at higher intensity on the mutually agreed-upon health calendar contract for a four week period (as indicated by the check sign "✓").[57] It is believed that her successful achievement of her goal is the most influential source of self-confidence because it is based on the actual experience of skill mastery.[57] The documentation of each behavior by marking a check sign on a health calendar contract provides visible evidence of skill mastery (in this case, additional brisk walks). Each subsequent successful behavior adds to a sense of self-efficacy.

➲ The health calendar contract is a tool that can be used with all older adults at risk for falls. When you present *Stand Strong for Life*, you can use the contract to give older adults a jump start to perform a preventive behavior (have vision checked, medication reviewed, practice healthy movements three times a week, have a home safety check and needed modifications done). Goals have to be attainable in order to maintain success and motivation.

A health calendar contract is included on page 36 for you to print and distribute to older adults.

Figure 2: Example of a Health Calendar Contract

My Health Goal: *Brisk walking (at about two times my normal leisure walking speed) five days a week over the next four weeks.* _____ _____ *My signature* *Health Care Provider*	**Benefits** 1. To manage my weight 2. To decrease my BP

Motivation, Memory and Overcoming Other Potential Barriers
In case of bad weather, use indoor location.
Seek the company of Aimee or Beatrice.

JANUARY

Sun	*Mon*	*Tues*	*Wed*	*Thurs*	*Fri*	*Sat*
						1 ✓
2	3 BW ✓	4 BW ✓	5	6 BW ✓	7 BW ✓	8
9 ✓	10 BW ✓	11 BW ✓	12	13 BW ✓	14 BW ✓	15 ✓
16	17 BW ✓	18 BW ✓	19 ✓	20 BW ✓	21 BW ✓	22
23	24 BW ✓	25 BW ✓	26	27 BW ✓	28 BW ✓	29 ✓
30	31					

➲ ***Key Point:***
To motivate older adults to continue to exercise , have vision checked, and medication reviewed, for instance, it is recommended to follow-up with them either in writing or by telephone or to use regular reminders.

Referrals and Community Outreach

Whenever an older adult is identified at risk for falls using one of the assessment scales, he or she should be referred for further evaluation (medication review, vision check, gait and balance, lower limb joints, neurological, cardiovascular). Based on older adults' needs, it may also be necessary to refer some older adults to health and social services available in the community (home health services, primary care physician, etc.). In order to provide appropriate referrals, knowledge of community stakeholders is necessary. Potential stakeholders are comprised of all individuals or organizations in the community who provide resources which, when combined, improve the ability of a community to recognize, evaluate, and address the problem of falls among older adults. Potential stakeholders are members of the community, family members, community service organizations, law enforcement officers, health and public policy advocates, local organizations, faith-based organizations. A list of community resources is included on page 34. For more information on community outreach and advocacy, refer to Module III of the 2006 ENA Injury Prevention Provider Manual. In that module, sample outreach letters, tips on how to be an effective advocate, a sample media release, press release, radio script, and more are provided to guide you in the promotion of injury prevention in your community.

➲ ***Key Point:***
A commonly used reminder and motivational tool in the field of aging is the health calendar contract

Support from Evidence-Based Research

Support for the Intervention

A number of randomized controlled trials and meta-analyses have been conducted in the last two decades to evaluate the effectiveness of multiple falls prevention programs targeting older adults. The most effective fall prevention programs for older adults include a variety of strategies such as exercise, medication reviews or modification, and education that target multiple risk factors.[55] For example, a study of 301 men and women over the age of 70, with at least one risk factor for falling, found that a multifaceted program that included adjustments to medication and education on exercise and balance and transfer skills, helped to reduce the incidence of falling, with intervention group subjects falling 35% of the time, compared to 47% in the control group.[55] Other compelling evidence has been found through multiple studies. After conducting a meta-analysis of 62 trials involving 21,668 older adults, Gillespie and colleagues found that multileveled, health/environment risk factor screening/intervention programs, muscle strengthening and balance retraining programs, home hazard assessment and modification, withdrawal of psychotropic medication, cardiac pacing with cardio-inhibitor carotid sinus hypersensitivity, and Tai Chi group exercise were the most effective fall prevention strategies.[58] Similarly, another meta-analysis of 40 trials showed that multileveled falls risk assessment and management programs and exercise programs were the most effective interventions.[4] Other researchers have conducted cost-analyses of fall prevention programs for high risk older adults. Researchers have found that for high risk older adults, fall prevention programs yield an estimated cost savings of $8.64 for every $1 spent in fall prevention strategies.[48] Unfortunately, the cost-effectiveness is not demonstrated in the case when fall prevention programs target low risk older adults.[59]

Module I: Health Care Professional Educational Module

Intervention Goals and Objectives

The goals and objectives listed below can be used to guide the process, impact, and outcome evaluation of the *Stand Strong for Life* intervention.

Individual Level

Goal 1: To increase health care professionals' knowledge about falls-related issues and preventive interventions among older adults

Objective 1: To increase by 10% health care professionals' knowledge about epidemiology of falls among older adults after completing *Stand Strong for Life* intervention

Goal 2: To increase the number of health care professionals who educate older adults about fall prevention

Objective 2: To increase by 10% the number of health care professionals who educate older adults about fall prevention using the *Stand Strong for Life* intervention during the first year after the intervention

Organizational Level

Goal 3: To increase the number of health care professionals who attend the *Stand Strong for Life*: Health Care Professional Educational module

Objective 3: To increase by 10% the number of health care professionals who attend the *Stand Strong for Life*: Health Care Professional Educational Module during the two years following the intervention

Goal 4: To increase the number of emergency departments, hospitals, and senior living facilities that implement falls prevention initiatives

Objective 4: To increase by 20% the number of emergency departments, hospitals, and senior living facilities that implement falls prevention initiatives during the first year after the intervention

Goal 5: To increase the number of older adults who receive fall-risk assessments when visiting the emergency department

Objective 5: To increase by 20% the number of older adults who receive fall-risk assessments when visiting emergency departments/hospitals or in senior living facilities during the first year after the intervention

Community Level

Goal 6: To reduce the number of falls among older adults in emergency departments, hospitals, and senior living facilities

Objective 6: To observe a 5% decrease in the number of falls and falls-related injuries among older adults two years after the intervention is implemented

Goal 7: To increase falls prevention among community-dwelling older adults by building community partnerships among health, aging, transportation, planning, and environmental organizations within the public and private sector

Objective 7: To increase by 10% the number of partnerships with community stakeholders one year after the intervention

Module II: Community-Based Module

Individual Level

Goal 1: To improve older adults' knowledge about their increased risks for falls

Objective 1: To increase by 10% older adults' knowledge about their increased risks for falls after attending the *Stand Strong for Life* presentation

Goal 2: To increase older adults' knowledge about how to prevent falls from occurring

Objective 2: To increase by 10% older adults' knowledge about methods to prevent falls after attending the *Stand Strong for Life* community presentation

Organizational level

Goal 3: To increase the number of senior living facilities that implement falls prevention initiatives

Objective 3: To increase by 20% the number of emergency departments, hospitals, and senior living facilities that implement falls prevention initiatives by 2010

Community Level

Goal 4: To reduce the number of risk factors for falls in older adults' homes

Objective 4: To reduce by 20% the number of risk factors in older adults' homes one year after the intervention is implemented

Goal 5: To increase the practice of fall-prevention activities among older adults

Objective 5: To observe a 10% increase in fall-prevention activities among older adults (i.e., physical activities, home safety check, foot and footwear check, medication review, vision check, use of assistive devices) one year after attending the community presentation

Goal 6: To reduce the number of risk factors for falls in older adults' communities

Objective 6: To reduce by 10% the number of risk factors for falls in older adults' communities five years after the intervention is implemented

Goal 7: To reduce the number of falls among older adults

Objective 7: To observe a 5% decrease in the number of falls and falls-related injuries among older adults two years after the intervention implemented

Goal 8: To reduce the severity of injuries related to falls among older adults

Objective 8: To observe a 5% decrease in injury severity among older adults who fell during the two years after the intervention was implemented

Goal 9: To increase falls prevention among community-dwelling older adults by building partnerships among health, aging, transportation, planning, and environmental organizations within the public and private sector

Objective 9: To increase by 10% the number of partnerships with community stakeholders during the two years following the intervention

Theoretical Framework

The development of the *Stand Strong for Life* program was guided using the Health Belief Model (HBM).[60] In general, the HBM states that people will take action to prevent, to screen for, or to control falls and fall-related injuries if they regard themselves as susceptible to falls, if they believe that falls would have potentially serious consequences, if they believe that a course of action available to them would be beneficial in reducing either their susceptibility to falls or the severity of falls-related injuries, and if they believe that anticipated barriers to taking action are outweighed by its benefits.[61] The following concepts are used to guide the development of the educational components and brochures.

- Perceived susceptibility to falls (Each year, more than one-third of the elderly persons in the U.S. fall; environmental factors contribute to half of the falls at home; and the risk of falls increases with age.)
- Perceived severity of falls (95% of hip fractures are caused by falls; Of those who fall, 20% to 30% suffer moderate to severe injuries such as hip fractures or head traumas that reduce mobility and independence, and increase the risk of premature death. As many as 50% of older patients require hospitalization after a fall die within one year)
- Perceived benefits of falls prevention (include the prevention of injury and potential disability)

- Perceived barriers to accomplishing prevention behaviors (Older adults may require assistance to remove throw rugs and clutter; reluctance to change)
- Cues to action that help older adults to easily remember and practice fall prevention behaviors (Health calendar, safe medication card, follow-up communication)
- Self-efficacy building activities to help older adults feel more comfortable and secure on their own (Have medication evaluated, vision and foot and footwear checks, creating a safe environment)

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Community Resources

Administration on Aging
U.S. Department of Health and Human Services
330 Independence Ave. SW
Washington, DC 20201
(202) 619-0724, (202) 619-0556
http://www.aoa.gov

Alzheimer's Association
919 N. Michigan Ave.
10th Floor
Chicago, IL 60611
(312) 335-8700

American Association for Geriatric Psychiatry
7910 Woodmont Ave.
7th Floor
Bethesda, MD 20814
(301) 654-7850

American Association of Homes for the Aging
901 E. St. NW,
Suite 500
Washington, DC 20004
(202) 783-2255
http://www.aahsa.org

American Association of Retired Persons
601 E St. NW
Washington, DC 20049
(202) 434-2277, (800) 424-3410
http://www.aarp.org

American Society on Aging
833 Market St., Suite 511
San Francisco, CA 94103-1824
(415) 974-9600

American Speech and Hearing Association
10801 Rockville Pike
Rockville, MD 20852-3279
(301) 897-5700
http://www.asha.org

Arthritis Foundation
1330 W. Peachtree St.
Atlanta, GA 30309-2898
(404) 872-7100, (800) 283-7800
http://www.arthritis.org

Directory of Aging Resources
Business Publishers
951 Pershing Dr.
Silver Springs, MD 20910-4464
(800) BPI-6737

Gerontological Society of America
1275 K St. NW, Suite 350
Washington, DC 20005-4006
(202) 842-1275
http://www.geron.org

Institute of Retired Professionals
The New School of Social Research
66 W. 12th St., Room 502
New York, NY 10011
(212) 229-5600
http://www.newschool.edu

National Association for Home Care
228 7th St. SE
Washington, DC 20003
(202) 547-7424
http://www.nahc.org

National Association of Area Agencies on Aging (N4A)
1730 Rhode Island Ave., NW, Suite 1200
Washington, DC 20036
(202) 872-0888
http://www.n4a.org/

National Association of Spanish Speaking Elderly
2025 I St. NW, Suite 219
Washington, DC 20006
(800) 638-8255

National Caucus of the Black Aged
1424 K St. NW, Suite 500
Washington, DC 20005-2410
(202) 637-8400

National Council of Senior Citizens
1331 F St. NW
Washington, DC 20004-1171
(202) 347-8800

National Institute on Aging
National Institute of Health
9000 Rockville Pike
Bethesda, MD 20892-0001
(301) 496-4000

Exercise Activities for Older Adults

Geriatrics and Aging
Canadian Center for Activity and Aging's Home Support Exercise Program
http://www.geriatricsandaging.ca/PDF/PDFJuly2003/0607homesupport.pdf

First Step to Active Aging
Your First Step
http://www.firststeptoactivehealth.com/youcan/index.htm

National Blueprint: Increasing Physical Activity Among Adults Age 50 and Older
Public Information/Active Aging Tips
http://www.agingblueprint.org/tips.cfm

National Institute on Aging
Exercise: A Guide from the National Institute on Aging
http://www.niapublications.org/exercisebook/exercisebook.asp

President's Council on Physical Fitness and Sports
Pep Up Your Life: A Fitness Book for Mid-Life and Older Persons
http://www.fitness.gov/pepup.htm

Fall Prevention

AGS Foundation for Health and Aging
http://www.healthinaging.org/public_education/falls_index.php

Fall Prevention Center of Excellence
http://www.stopfalls.org/

Feet and Footwear

Institute for Preventive Foot Health
http://www.ipfh.org

Home Modification

Cornell University
Joan and Sanford I. Weill Medical College
http://www.environmentalgeriatrics.com/

Health Calendar Contract

HEALTH CALENDAR CONTRACT	
My Health Goal: _____ _____ *My signature* *Health Care Provider*	**Benefits (List)**
Motivation, Memory and Overcoming Other Potential Barriers	
MONTH _____	

Sunday	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*

Handout I

Figure 1. Community Setting Presentation/Intervention Model

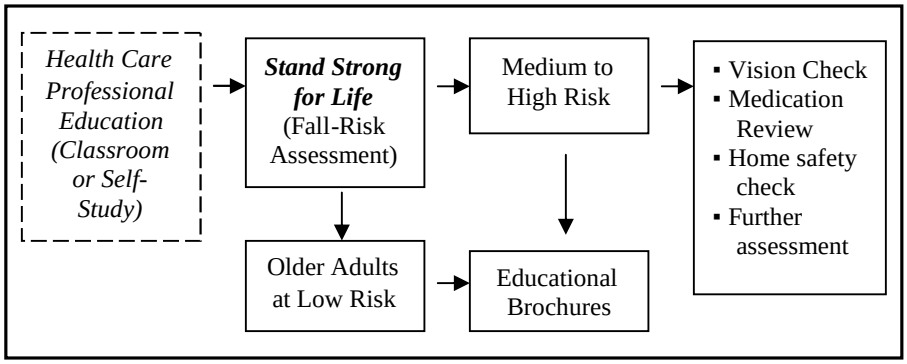
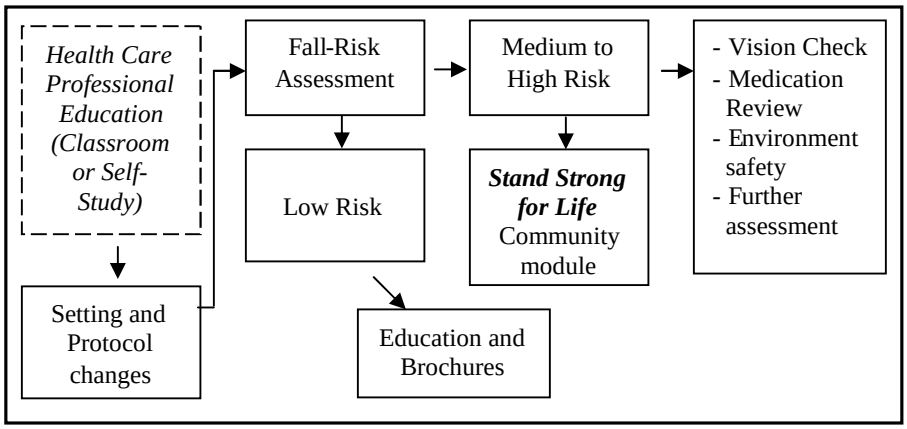


Figure 2. ED/Hospital/Senior Living Communities Intervention Model



Settings	Risk Factors	Interventions	Implementation Activities
Community Presentation ***Stand Strong for Life***	Previous Falls	Fall-Risk Assessment (*conducted before the presentation*)	▪ Complete screening before presentation begins ▪ Refer to primary care provider or community and home health services, if needed
	Visual Impairment	Vision Check	▪ Educate older adults ▪ Refer to a primary care provider for checkup
	Polypharmacy	Medication Review	▪ Educate older adults ▪ Refer to a primary care provider or pharmacist ▪ Distribute ***Safe medication card***
	Reduced balance, gait, and muscle strength	Physical Activity	▪ Educate older adults ▪ Distribute ***Healthy Movements*** brochure ▪ Practice ***Healthy Movements*** ▪ Distribute *Health Calendar Contract* ▪ Refer to a primary care provider or community and home health services, if needed
	Unsafe Home Environment	Home Safety Check	▪ Educate older adults ▪ Distribute ***Check for Safety: A Home Fall Prevention Checklist for Older Adults*** brochure ▪ Refer to community and home health services, if needed
	Podiatric Problems Inadequate footwear	Feet and Footwear Check	▪ Educate older adults ▪ Distribute ***Foot and Footwear Check*** brochure ▪ Refer to primary care physician and home health services, if needed
Emergency Department/ Hospital/ Senior Living Facility	Previous Falls	Fall-Risk Assessment	▪ Complete screening ▪ Refer to primary care provider or community and home health services, if needed ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Visual Impairment	Vision Check	▪ Educate older adults ▪ Refer to a primary care provider for checkup ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Polypharmacy	Medication Review	▪ Educate older adults ▪ Refer to a primary care provider or pharmacist ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Distribute ***Safe medication card***
	Reduced balance, gait, and muscle strength	Physical Activity	▪ Educate older adults ▪ Distribute ***Healthy Movements*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk)
	Unsafe Home Environment	Home Safety Check	▪ Educate older adults ▪ Distribute ***Check for Safety: A Home Fall Prevention Checklist for Older Adults*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Refer to community and home health services, if needed
	Podiatric Problems Inadequate footwear	Feet and Footwear Check	▪ Educate older adults ▪ Distribute ***Foot and Footwear Check*** brochure ▪ Refer to *Stand Strong for Life* (medium/high risk) ▪ Refer to primary care physician and home health services, if needed
All settings	All	General Educational Information	▪ Distribute the ***What You Can Do to Prevent Falls*** brochure to all older adults

HANDOUT 2

Morse Fall Scale

The Morse Fall Scale (MFS) is a rapid and simple method of assessing a patient's likelihood of falling. A large majority of nurses (82.9%) rate the scale as "quick and easy to use," and 54% estimated that it took less than three minutes to rate a patient. It consists of six variables that are quick and easy to score, and it has been shown to have predictive validity and interrater reliability. The MFS is used widely in acute care settings, both in the hospital and long term care inpatient settings.

Item	***Scale***	***Scoring***
1. History of falling; immediate or within 3 months	No 0 Yes 25	_____
2. Secondary diagnosis	No 0 Yes 15	_____
3. Ambulatory aid Bed rest/nurse assist Crutches/cane/walker Furniture	 0 15 30	_____
4. IV/Heparin Lock	No 0 Yes 20	_____
5. Gait/Transferring Normal/bedrest/immobile Weak Impaired	 0 10 20	_____
6. Mental status Oriented to own ability Forgets limitations	 0 15	_____

The items in the scale are scored as follows:

History of falling: This is scored as 25 if the patient has fallen during the present hospital admission or if there was an immediate history of physiological falls, such as from seizures or an impaired gait prior to admission. If the patient has not fallen, this is scored 0. Note: If a patient falls for the first time, then his or her score immediately increases by 25.

Secondary diagnosis: This is scored as 15 if more than one medical diagnosis is listed on the patient's chart; if not, score 0.

Ambulatory aids: This is scored as 0 if the patient walks without a walking aid (even if assisted by a nurse), uses a wheelchair, or is on a bed rest and does not get out of bed at all. If the patient uses crutches, a cane, or a walker, this item scores 15; if the patient ambulates clutching onto the furniture for support, score this item 30.
Intravenous therapy: This is scored as 20 if the patient has an intravenous apparatus or a heparin lock inserted; if not, score 0.

Gait: A *normal gait* is characterized by the patient walking with head erect, arms swinging freely at the side, and striding without hesitation. This gait scores 0. With a *weak gait* (score is 10), the patient is stooped but is able to lift the head while walking without losing balance. Steps are short and the patient may shuffle. With an impaired gait (score 20), the patient may have difficulty rising from the chair, attempting to get up by pushing on the arms of the chair/or by bouncing (i.e., by using several attempts to rise). The patient's head is down, and he or she

HANDOUT 3

watches the ground. Because the patient's balance is poor, the patient grasps onto the furniture, a support person, or a walking aid for support and cannot walk without this assistance.

Mental status: When using this Scale, mental status is measured by checking the patient's own self-assessment of his or her ability to ambulate. Ask the patient, "Are you able to go the bathroom alone or do you need assistance?" If the patient's reply judging his or her own ability is consistent with the ambulatory order on the Kardex®, the patient is rated as "normal" and scored 0. If the patient's response is not consistent with the nursing orders or if the patient's response is unrealistic, then the patient is considered to overestimate his or her own abilities and to be forgetful of limitations and scored as 15.

Scoring and Risk Level: The score is then tallied and recorded on the patient's chart. Rsk level and recommended actions (e.g. no interventions needed, standard fall prevention interventions, high-risk preventive interventions) are then identified.

Important Note: The Morse Fall Scale should be calibrated for each particular healthcare setting or unit so that fall prevention strategies are targeted to those most at risk. In other words, risk cut-off scores may be different depending on if you are using it in an acute care hospital, nursing home or rehabilitation facility. In addition, scales may be set differently between particular units within a given facility.

Sample Risk Level

Risk Level	**MFS Score**	**Action**
No Risk	0 - 24	Good Basic Nursing Care
Low Risk	25 - 50	Implement Standard Fall Prevention Interventions
High Risk	≥ 51	Implement High Risk Fall Prevention Interventions

From Morse, J.M. (1997). Preventing patient falls. (p. 41), copyright 1997 by Thousand Oaks, CA: Sage Publications, Inc. Reprinted by permission of Sage Publications, Inc.

Falls - Assessment/Screening/Diagnosis

Risk	Yes	No
1. Previous falls		
2. Cardiac arrhythmias		
3. Transient ischemic attacks		
4. Stroke		
5. Parkinson's Disease		
6. Delirium		
7. Dementia		
8. Depression		
9. Musculoskeletal disorders (e.g., osteoporosis, myopathy)		
10. Altered mobility and/or gait		
11. History of prior fractures		
12. Orthostatic hypotension		
13. Bowel or bladder incontinence		
14. Sensory impairments (vision, hearing, tactile)		
15. Dizziness		
16. Dehydration		
17. Acute illness (e.g., infection)		
18. Use of restraints		
19. Diabetes, particularly with history of or risk of hypoglycemia		
20. Polypharmacy		

Score:

- 0-5 in the yes column is low risk
- 6-10 in the yes column is moderate risk
- 11+ in the yes column is high risk

From Resnick, B. (2003). Preventing Falls in Acute Care (Table 9.2, p. 144). In Geriatric Nursing Protocols for Best Practice (2nd ed). Mezey, M., Fulmer, T., Abraham, I. (eds.); Zwicker, D., (Managing Editor). Used by permission from Springer Publishing Company, Inc., New York, 10036.

HANDOUT 4

ENA Injury Prevention Institute/EN CARE
Emergency Nurses Association
915 Lee Street
Des Plaines, IL 60016
800/900-9659, ext. 4112
http://www.ena.org/ipinstitute