



# OVERCOMING OBSTACLES TO POLICIES FOR PREVENTING FALLS BY THE ELDERLY FINAL REPORT

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*Prepared for*  
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*Prepared by*

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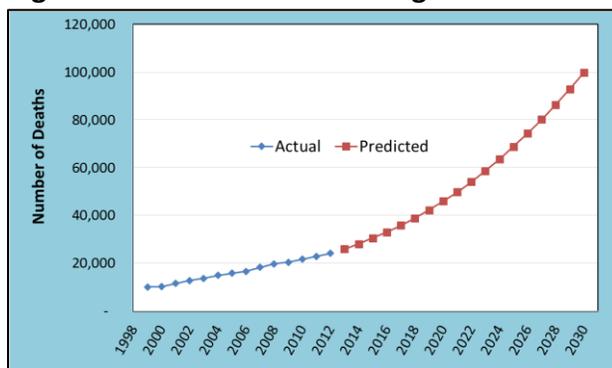
## Executive Summary

In July 2016, the Office of Lead Hazard Control and Healthy Homes (OLHCHH) at the U.S. Department of Housing and Urban Development (HUD) awarded Healthy Housing Solutions, Inc. (Solutions) a task order to assess obstacles encountered by communities in developing and implementing policies and programs to prevent falls by the elderly.

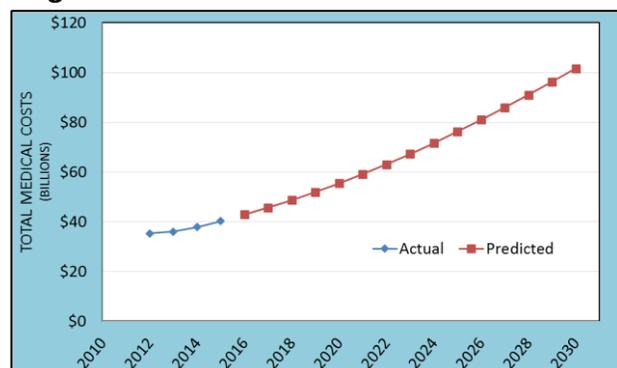
Such falls are a leading cause of injury, long-term disability, premature institutionalization, and injury-related mortality. By 2020, expenditures related to injuries sustained as a result of falls by seniors are projected to cost nearly \$59.7 billion. Approximately one-third of adults age 65 years or older fall each year; the majority of these falls occur in the home.

Solutions' review of the literature found that falls are the most common cause of traumatic brain injuries and fractures for older adults. Falls often result in seniors being institutionalized, losing their functional dependence, and/or developing a paralyzing fear of falling. Fall-related mortality increases with age. Although numerous interventions have shown success at reducing the incidence of falls among the elderly, comparatively few communities are adopting and implementing intervention programs and policies. Fall rates among the elderly continue to increase and many people within the public health community view senior falls as a significant health concern.

**Figure 1. Fatal Falls in Adults Age 65+**



**Figure 2. Medical Costs Due to Fatal Falls**



Source: Adapted from Houry et al. 2016 / The CDC Injury Centers Response to the Growing Public Health Problem of Falls Among Older Adults

The "Overcoming Obstacles to Policies for Preventing Falls by the Elderly" (Senior Falls Prevention) task order included three major assignments:

1. Conduct a literature review of the causes and effects of senior falls, which also examined recommendations and potential obstacles to program and policy implementation;
2. Recruit and convene an expert panel to provide input on senior fall prevention policy and program strategies; and
3. Create a Toolkit to help private and public sector senior fall prevention stakeholders overcome identified obstacles.

The literature review explored and evaluated current research on senior fall prevention to identify the most common cause(s) and risk predictors of elderly falls, especially within the home. It explored the impact of fall-related injuries on the individual, as well as the impact on healthcare costs and overall society. The review also attempted to identify current recommendations and guidelines on how senior

falls could be reduced and prevented. Although there was an abundance of literature and research on specific fall prevention interventions and strategies and their effectiveness, there was relatively little that focused specifically on how to overcome obstacles to improve policies and programs designed to reduce senior falls.

The literature review found that senior fall risk assessments and screenings are not being broadly incorporated into most clinical practices and that many physicians are not trained to conduct proper assessments. Additionally, the literature seemed to indicate that earlier interventions, tailored to the individual senior, may provide the best return on investment (ROI) for fall prevention programs.

Although few of the studies targeted overall policy issues, the literature review did reveal several major obstacles to adopting and implementing policies and programs for preventing falls among the elderly. These include:

- The lack of long-term coordinated funding and services;
- The inability to recruit and engage seniors in fall prevention activities; and
- A lack of uniformity on research methodology (i.e., the difficulty in comparing the effectiveness of programs because of the various ways intervention studies are conducted).

Perhaps most importantly, although the literature review was focused specifically on "senior fall prevention," several multicomponent interventions and coordinated care models were also identified. Programs and models such as the Program of All-Inclusive Care for the Elderly (PACE), Accountable Care Organizations (ACO) or MediCaring Communities<sup>1</sup>, which often address senior fall prevention as one element of a broader, holistic approach to senior care, appeared to help overcome some of the identified obstacles because their coordinated efforts facilitated seniors' ability to age in place.

The Senior Falls Prevention Expert Panel members represented diverse public agencies and private sector organizations from across the country. The Panel included both practitioners and academics/researchers actively engaged in and familiar with senior falls prevention programs and strategies to overcome obstacles to implementation. Solutions' goal was to recruit a maximum panel of 15 participants – nine non-federal and six federal. Over a ten-week period, Solutions contacted 22 potential candidates, sometimes numerous times, to recruit and confirm their participation on the panel. The final expert panel consisted of nine non-federal representatives and two federal representatives.

The most common themes that emerged from one-on-one discussions with panelists and the joint panel webinars included the lack of coordinated funding for senior care services, the need for a more holistic approach to aging-in-place and senior health needs, and the need for more engagement from seniors and their caregivers and physicians.

Although the panelists agreed that great strides have been made in the past five to ten years, the problem with senior falls is growing at an accelerated pace as more of the population ages and not enough attention is being paid to the issue. Panelists were encouraged by HUD's interest in senior falls and the potential that both federal and local agencies are beginning to work together. The panelists shared several recommendations for a coordinated funding and care approach along with improved

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<sup>1</sup> More information on these programs and models can be found at <https://www.medicare.gov/your-medicare-costs/help-paying-costs/pace/pace.html>, <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/ACO> and <http://medicaring.org/tag/medicaring-communities/>, respectively.

sharing of data and resources. Many suggested that senior falls prevention be embedded as one element of an overall approach to coordinating and improving senior care.

Employing information and material offered by the Expert Panel and the review of available literature, Solutions created the Senior Falls Prevention and Coordinated Care Toolkit to help public- and private-sector policy and program stakeholders navigate and overcome obstacles related to developing and implementing senior falls prevention programs. The Toolkit addresses four key areas:

1. Why senior falls prevention and coordinated care is an important societal issue and what some communities are doing to meet the needs of seniors;
2. What partners and stakeholders should be engaged in the effort, what each "brings to the table," and why a holistic approach may provide the best potential to address the problem;
3. What financial resources, from governmental to philanthropic, may be available to help create and sustain effective policies and programs; and finally,
4. How to sustain policies and programs over the long-term.

The Toolkit highlights numerous funding resources and includes the rationale for outreach to some nontraditional partners to improve delivery of services and care to seniors.

This Final Report provides details on Solutions' approach to completing each of the above tasks. It also offers recommendations, derived from the literature review and expert panel discussions, on how HUD and other government and philanthropic entities can help communities overcome obstacles to the development and implementation of senior falls prevention and coordinated care policies and programs.

## I. Literature Review Research and Findings

Solutions' literature review identified articles and studies focused on the causes of elderly falls along with their related costs and impacts; potential policy and implementation barriers to senior fall prevention programs; and current recommendations about how to address this growing public health concern.

Prior to initiating a review of published literature, Solutions submitted search terms to HUD OLHCHH for input and confirmation of the direction Solutions planned to take with the review. A preliminary list of proposed studies and articles for review were also provided to OLHCHH in mid-July 2016 for feedback. Solutions incorporated OLHCHH's comments, including suggestions of several additional studies, into the review.

Solutions conducted the initial literature review using PubMed, EBSCOhost, Google Scholar, and Google. Searches were limited to English-language only articles published primarily after 2006, with a focus mainly on 2010 to August 2016. In addition to the literature search, Solutions reviewed the Centers for Disease Control and Prevention's (CDC) Injury and Prevention Control webpage; two Solutions' reports, "HUD Healthy Homes Issues: Injury Hazards" and "Identifying Sources of National and Regional Data For Developing U.S. Benchmarks for the Healthy Home Rating System (HHRs)" (prepared for OLHCHH in 2013 and 2014, respectively); and several other falls prevention resource sites.

Although the literature search was most effective when the words "elderly" or "senior" were combined with "falls" and at least one other relevant term such as "home" or "risk," the search strategy was always tailored to the particular database being used. As the literature review continued, additional

terms such as "coordinated care" were added to reflect other cited articles and studies as well as feedback from expert panelists. Also, during the one-on-one discussions with members of the expert panel, Solutions collected further suggestions about studies to review and include in the literature review.

Causes of senior falls most often cited by the literature included gait and balance problems; loss of lower body muscle mass and muscle weakness; conditions such as cardiovascular disorders and Parkinson's disease; impaired vision; medication side effects and interactions; residential and environmental hazards; nutritional deficiencies; and behavioral issues.

The literature indicated that unintentional falls are the leading cause of injuries among adults age 65 years and older. Although most falls result in minor injuries, up to 30 percent of seniors suffer moderate to severe injuries, some even resulting in death. In fact, falls are now the fifth leading cause of death for those over 65. Nearly any type of fall can adversely impact a senior's ability to maintain their independence. Even if a fall causes no noticeable physical injury, it can instill a fear of falling that can lead a senior to limit their physical activities and lessen their social interactions.

Approximately half of the falls referenced in the studies occurred in the senior's home environment and were reportedly connected to hazards such as loose rugs, unstable furniture, obstructed walkways, lack of railings and grab bars, or inadequate lighting. However, most of the studies concurred that falls are rarely caused by a single factor. At least one study indicated that 78 percent of senior falls involve four or more risk factors.

The number one predictor for a senior fall identified in the literature was a previous fall. Moreover, once a fall occurs, studies show that seniors are two to three times more likely to fall again. The exception is if the fall occurred outdoors and the senior was relatively healthy prior to the initial fall.

The literature also showed that senior falls take both an emotional and monetary toll. Nonfatal fractures caused by a fall tend to be the most common and costly fall injuries, accounting for about 61 percent of senior fall costs. In 2013, the National Council on Aging (NCOA) reported that direct health care costs from fall-related injuries equaled \$34 billion, with the average cost of hospitalization for a fall injury being more than \$35,000. This exceeds the predicted 2020 annual costs of \$32 billion made by some researchers just ten years ago. It also highlights an obstacle revealed by a review of the literature: researchers often use different methodologies to report costs. Some of the reviewed literature found that data sources and cost categories vary from study to study, which makes it difficult to compare costs.

Along this vein, the literature review revealed that studies often use inconsistent reporting methodologies, making it difficult to compare and contrast program and intervention results. Several researchers indicated that how programs and interventions were described and their outcomes reported complicated their ability to assess their effectiveness and actual impact. Several articles recommend creation and adoption of uniform reporting standards and definitions to improve program evaluation.

According to several studies, there are many steps that can be taken to help reduce senior falls through coordinated care and promotion of aging-in-place practices. However, most also highlighted that there is no "one-size-fits-all" strategy. Coordinating funding and services, building housing that can adapt to changing needs as the population ages, and promoting physical activity with balance and strength

exercises at an earlier age were some of the most prominent recommendations. One major message received from the studies was that programs need to be tailored to address the functional abilities of the individual senior and the specific circumstances of their health and home environment.

Many studies also reported the need for improved education and communication around senior falls prevention and coordinated care directed at not only seniors and their families/caregivers, but also to healthcare providers, public officials, and community planners/developers. Although senior falls are on the rise as the U.S. population ages, several researchers indicated that falls are preventable and that the tide could be reversed if more people understood the causes and the steps that individuals, as well as the overall community, could take to reduce and prevent them.

It should be noted that a majority of the studies on senior falls prevention found in the initial literature review focused on interventions and programs targeted to physical activities related to exercise and balance; only a handful specifically targeted the impact home modifications have on reducing senior falls. However, discussions with the expert panelists revealed that numerous programs and models, including several promoting home assessment and modifications, which successfully reduce falls among the elderly, are not necessarily categorized as "falls prevention" programs. These broader programs and models of care focus on coordinating community-based senior care and services. They often offer exercise and balance classes or home modifications for seniors, when needed, as elements of their overall delivery of services. This revised understanding of how programs were designed and what they offered led Solutions to expand its literature review to include more comprehensive and inclusive programs such as PACE.

The full literature review conducted for Overcoming Obstacles to Policies to Preventing Falls among the Elderly can be found in the Appendix.

## II. Creation of and Discussions with the Senior Falls Prevention Expert Panel

A panel of experts from various fields and sectors related to senior falls prevention was created to complement the findings of the literature review and gain deeper insights about community efforts to reduce and prevent falls among the elderly. Prior to the project kickoff teleconference, Solutions provided HUD OLHCHH with a preliminary list of potential candidates for the expert panel. The proposed candidates were discussed during the call and, to facilitate OLHCHH's review of the candidates, Solutions compiled bibliographical sketches for each individual. Based on OLHCHH's feedback, Solutions researched additional candidates and provided an expanded list of potential candidates (along with their biographical sketches) to OLHCHH in mid-July 2016. Proposed candidates represented a variety of disciplines and ethnic groups to ensure broad, diverse representation.

While OLHCHH reviewed the list of proposed candidates, Solutions drafted a one-page description of the project to disseminate to potential panelists, and created a phone script and email message to use during outreach efforts. Upon receiving OLHCHH's candidate preferences, Solutions began contacting the candidates to secure their participation on the panel.

Although the initial goal was to recruit a panel of no more than 15 participants (nine non-federal and six federal), Solutions contacted 22 potential candidates, sometimes numerous times, to recruit and confirm their participation. As potential candidates declined invites or were unreachable, Solutions moved down to the next name on the list of OLHCHH-approved candidates.

The Expert Panel recruitment and confirmation process was initially expected to take approximately four weeks. However, because the process was conducted during summer months when many people were on vacation, it took Solutions more than ten weeks to finalize a panel of nine non-federal and two federal experts. Additionally, although OLHCHH hoped to recruit six federal panelists, only two candidates among those recommended by HUD and suggested by the CDC felt they could commit the time and had the necessary qualifications to participate. (Biographical sketches of member of the Expert Panel are available in the Appendix.)

As Solutions recruited participants for the Expert Panel, the team also drafted questions to ask during one-on-one discussions with the panelists. The questionnaire was designed to identify barriers the panelists encountered in the implementation of fall prevention policies and programs, learn how they overcame obstacles, and collect recommendations to improve policies and implementation of senior falls prevention strategies. Solutions submitted the list of proposed questions to OLHCHH for review and comments in early August 2016, with the questionnaire being streamlined once OLHCHH's feedback was received. Although the basic questionnaire still included a significant number of questions, the actual one-on-one phone call discussions were tailored to the subject matter expertise of the specific panelist, so all of the questions were rarely posed to each participant.

From mid-August 2016 through the third week of September 2016, Solutions conducted 90-minute one-on-one phone interviews with each panelist. In addition to the one-on-one discussions, Solutions hosted moderated discussions via GoToMeeting (GTM) webinars on September 16 and September 23, 2016. Solutions developed presentations for each of the sessions, which highlighted main "take-aways" from the literature and individual interviews as well as posed questions to facilitate discussion about the best strategies and use of resources to improve senior care and reduce fall risks. The presentations also outlined recommendations obtained from the literature review and individual discussions according to common "themes" to aid the discussion and build consensus on proposals to offer HUD OLHCHH.

Although the initial intent was to hold one meeting with all of the panelists, conflicting schedules required two sessions. Each session included four panel participants; three panelists were unable to participate in either of the webinars. Additionally, because the final one-on-one phone call discussions could not be scheduled until two days before the second webinar, a full synopsis of all of the panelists' responses was not shared with the entire group prior to the first joint webinar. Instead, Solutions provided a summary recap during the webinar and asked participating panelists to provide feedback and add their own observations during the call. Based on feedback from the first session and the final individual call, Solutions slightly revised the presentation for the second webinar.

Complete notes from the one-on-one discussions with members of the Expert Panel are included in the Appendix. The following is a synthesized version of the one-on-one discussions provided to the panel updated with comments from the webinars. Final recommendations that emerged from the discussions can be found in *Section IV. Recommendations for Senior Falls Prevention and Coordinated Care* on page 14.

### **Innovative State and Local Policies**

Some states and local jurisdictions offer grant and loan programs for renovations and home modifications to help seniors "age in place," however, only a few of the expert panelists had direct experience with them. A couple of the panelists noted that, although grants can be extremely beneficial, they are often oversubscribed and have limited potential for ongoing funding. They suggested that an

alternative approach, to ensure the program was sustainable, would need permanent funding (e.g., a line item in the appropriations budget).

A few panelists also cited innovative models that offered some type of continuous care,<sup>2</sup> such as the Medicare's Program of All-Inclusive Care for the Elderly (PACE) or Support and Services at Home (SASH), but very few currently offer them. A few panelists indicated they were trying or would like to move their programs more in the direction of coordinated care and funding similar these models.

One panelist discussed how his community was getting seniors more physically active by working with other offices in their public health department, which are focused on reducing obesity and encouraging leisure time activities that support exercise. This panelist emphasized the need to build communities that encourage seniors to get outside to take advantage of enjoyable and easily accessible green space.

In Oregon, a pilot model created through a partnership between the State University Health and Science and Gerontology departments is attempting to work across several sectors to ensure continuity of care. Under this program, the Stopping Elderly Accidents, Deaths & Injuries (STEADI) toolkit, developed by the CDC, is provided to healthcare providers; clinical groups are trained to conduct assessments; healthcare providers are trained in interventions; and all of the groups become referral resources for physicians participating in the program.

Some of the successful state/local policies and programs identified by panelists included:

- Programs that train first responders and social services agency representatives to identify seniors at risk for falls and conduct home assessments. Since these workers are already in the community and often know and/or have a relationship with seniors, it is an effective method to reach and help more community-based seniors.
- Coordinated care models that manage care and delivery of services to improve seniors' quality of care and enable them to remain in the community. Often these models coordinate efforts between a variety of service agencies (e.g., public health, aging, and housing). Models mentioned, which have shown costs savings over traditional administration of support services provided separately, include:
  - **SASH** (Support And Services at Home): SASH provides seniors comprehensive service management of their housing, healthcare, and social service needs. Coordinators and Wellness Nurses help seniors navigate the healthcare system to ensure they receive coordinated medical care and the assistance they need to remain in their homes as long as possible. SASH partners with a variety of organizations across Vermont, including local area agencies on aging, mental health agencies, local hospitals, and the Visiting Nurse Association to provide care management and preventive services. As a population based system, SASH offers its service and support to seniors regardless of payer. The model is integrated with Vermont's Blueprint for Health and is currently funded through a Medicare demonstration.
  - **CAPABLE** (Community Aging in Place—Advancing Better Living for Elders): CAPABLE was launched by the Johns Hopkins School of Nursing in Baltimore, Maryland, to help functionally impaired low-income seniors address their health issues while living in a safe home environment. An interdisciplinary team, composed of a community health worker, registered nurse (RN), occupational therapist (OT), and a housing repair specialist from a local nonprofit organization, work with seniors to address their physical and medical issues and the

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<sup>2</sup> A continuous care model is an ongoing, permanent system in which senior health services and care are coordinated, generally through a case management. Various assessments are conducted with the senior, available services and interventions are identified, and seniors are linked to available resources.

functionality of their home environments. After the OT completes an on-site fall risk and home assessment with the senior, the team works with the resident to prioritize modifications, and then coordinates the work with the local community development nonprofit (availability of funding may impact the range of available home modifications).

- **PACE** (Program of All-Inclusive Care for the Elderly): PACE is a Medicaid-sponsored program that provides coordinated care through an interdisciplinary team of health professionals. Financing for the program is capitated, which allows providers to deliver all services participants need rather than only those reimbursable under Medicare and Medicaid fee-for-service plans. Established as a provider in the Medicare program and as a state option under Medicaid, it is available in relatively few states/communities.

### Policy and Program Obstacles

The number one obstacle noted by nearly every panelist was the lack of dedicated, coordinated funding to support senior care and services.

Another major obstacle cited was lack of coordination between various local, state and federal agencies. Although several agencies have their own injury and falls prevention programs, there is no lead agency that coordinates programs/actions being administered by all of them. Additionally, funds available to the states often have to meet a variety of regulations and have varying restrictions. Several panelists thought there needed to be a group of agencies or an interagency council on aging that had the ability and authority to make changes to the way current programs are managed and administered.

Numerous panelists indicated that current policies on reimbursements for different senior services and care often inhibit their ability to provide a wide range of effective falls prevention programs and services.

Several panelists noted that competing priorities were big obstacles to implementing effective falls prevention programs. Although the subject of senior falls is a major issue, there are numerous other health issues that take priority; with limited resources, falls prevention often is put on back burner. At the state level, injury and fall prevention programs especially tend to be a lower priority, and generally there is only one person coordinating state-wide efforts.

Panelists also discussed the problems caused by policies related to senior care and living being made in and by siloed agencies without regard to the impact on and interconnection with housing, healthcare, transportation, and other community development and public health issue policies.

The inability to share data to coordinate care between various providers was cited as a major barrier to effective implementation of programs.

The requirement under most grants that interventions be "evidence-based" puts a significant burden on local communities from both a cost and staffing perspective. One panelist suggested that an approach similar to that taken by the Occupational Safety and Health Administration (OSHA) might be more appropriate. Under OSHA, a set of eight to 10 critical elements are identified and, to be eligible for a grant, a potential grantee determines which elements will be included in the program to qualify for a grant. This provides communities more flexibility to craft interventions/programs to better meet their community residents' needs.

Understanding how to get a better ROI for a program(s) was important to several panelists. It was noted that the agencies or sectors that receive the benefit from a program or intervention are not always the one(s) footing the cost. For example, home modifications may help reduce the incidence of seniors falls which is a public health benefit, but rarely are costs for home modifications supported by healthcare funds.

Many panelists felt that programs are not marketed well and seniors are not recruited in the right fashion (i.e., seniors do not want to see themselves as needing the programs being offered or even as being considered "elderly". In turn, this leads to a lack of community support and engagement; seniors will not participate because they do not see the importance or need for themselves. As one panelist explained, aging is a slow process and many seniors (and their families) do not understand how the interventions/programs/models can help.

The stigma of being seen as "senior," "elderly," or "aging," while not a policy issue per se, creates a barrier to implementing effective falls prevention policies and programs. Although there is a movement in this direction already, panelists indicated that policies and programs are needed to build awareness and change the perception that falls are part of the "natural course of aging."

Senior "behavior" and lack of engagement were identified as significant factors by numerous panelists: even if a falls prevention program is in place, it cannot be effective if seniors do not participate and do the work/physical activity necessary to maintain their physical condition and address home hazards.

Several panelists indicated that many policies and programs are too limited and/or focused on one aspect of the senior aging in place and health (e.g., simply on falls) and are reactive versus preventive.

A few panelists indicated that the connection between falls and the physical environment is not always clearly articulated. For example, although not broadly cited as a specific obstacle, building codes and housing conditions, along with neighborhood conditions, were discussed by a few panelists as fall risk factors. (Note: The focus on "falls prevention" may have created a disconnect that seems to be somewhat prevalent when talking about how building and community conditions and design impact seniors' ability to navigate and avoid falls.)

Other barriers cited included:

- Interventions/programs are not always located in the communities with the greatest need.
- Lack of access to transportation: even if a program is centrally located, it is often difficult for a senior to get to a senior center or wherever the services are being offered.
- Lack of workforce: there are not enough qualified/certified staff to provide program services or administer intervention programs.

### **Suggested Policy and Program Remedies**

- Create a dedicated and coordinated funding stream to support aging-in-place, senior safety at home, and continuous care models. The dedicated fund could be created by coordinating funding from all agencies that serve seniors. Coordinating funds and services in this manner would help improve the health and well-being of seniors and, in turn, provide significant healthcare cost savings by reducing the number of seniors transitioning from the community to long-term institutional care. Increased funding to agencies would be provided under the condition that senior care and fall prevention programs/efforts are coordinated and demonstrate reduced healthcare costs. The

federal government could require the same level of coordination for any funds that go directly to state and local governments in the form of federal Community Development Block Grants (CDBG) or other grants. As one panelist noted, the ripple effect of funding at the federal level impacts everything on down.

- Increase use of Medicaid waivers and managed care plans for assessments and interventions, as well as for seniors' home modifications. Allow an expansion of Medicare coverage<sup>3</sup> to include home modifications and a broader range of practices that can help seniors age-in-place (e.g., allow both Medicaid *and* Medicare funding/reimbursement for assessments, training with assistive devices, home modifications, etc. to support seniors aging-in-place). Similarly, expand pots of money from programs such as CDBG, Older Americans Act, and Americans with Disabilities Act to cover modifications (e.g., ramps, chair slides) that allow seniors to remain at home. Funding would drastically reduce the need for funding for nurse home facilities.
- Create flexible, capitated healthcare payment schedules/arrangements based on the number of enrollees to allow providers to spend as much time as needed with clients/patients.
- Support more grant and loan programs for senior home modifications. One panelist suggested that low-interest and/or forgivable loans would be a good option to consider for low-income seniors.
- Create policies supporting coordinated/interagency efforts around senior care and falls prevention. Panelists discussed how "policies" are often siloed in the same way as agencies. Various aspects of active living should be entwined (e.g., health and housing costs often go hand in hand and federal policies could be designed to better integrate their budgets without reductions to either). Have transportation departments address the lack of viable transportation options. Policy and funding would be coordinated under one lead agency, and include a broad variety of federal/state agencies, including public health, housing, and transportation. (Note: Panelists indicated it was not essential that public health agencies lead the effort.)
- Integrate policies around service delivery – allow one person/group to go into a senior's home and perform all services (i.e., health, home, fire safety assessment). Embed falls prevention assessments into what agencies are already doing in the community. For example, several panelists mentioned the role first responders (EMS and fire) could play in senior fall risk assessments. This would allow better utilization of people and services already in place. It could also promote coordinated workforce expansion to meet the growing elderly population. Along this same vein, embed fall prevention *interventions* into existing programs and models. Programs do not necessarily need to specifically even target the "elderly;" they could be part of a broader healthy communities initiative/model of care.
- Promote entire "systems" change rather than time-limited interventions or programs designed to address one issue (e.g., falls) in isolation from others (e.g., housing, active living, healthcare). Encourage models of coordinated care that promote patient-driven programs and interventions that address both housing and health. For example, Medicare and Annual Wellness appointments should address and improve both environmental and health fall risk hazards. This would ensure Medicare promotes preventive health measures from day one, and provides full assessments of not only the individual, but also their home environment.
- Sponsor senior housing service and coordination demonstration projects to track accrued healthcare savings and reduction of senior falls through coordinated community-based care and services. These

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<sup>3</sup> Medicare Advantage Plans may allow more services related to home modifications, but that is determined by the insurer and is generally only available to those that can afford that extra coverage.

could also support evidence- and community-based models that train and connect housing and community professionals with medical professionals (and vice versa) and allow for repeat individual and home assessments. Models such as CAPABLE and SASH could be used as examples of supportive services and housing for seniors.

- Create a "healthy homes" medical prescription/designation, where a physician could prescribe home modifications/use of technology/safety devices in the home and to make items reimbursable by health insurers. At the same time, ensure hospital and rehab center discharge procedures address home environments prior to discharge.
- Promote systems that create non-traditional "healthcare" providers (.i.e., offers on-the-ground training and reasonable wages to non-degreed individuals) to support work and provision of care in the community (if necessary, training could result in some type of certification).
- Make the best models of coordinated senior care part of the public health surveillance system (similar to vaccines) to track the impact of the models on health and healthcare costs.
- Invest in a shared data system across all providers of senior services to promote coordinated care. It would not necessarily have to be limited to seniors, but seniors could be the starting point. Clearer information and communication about what the Health Insurance Portability and Accountability Act (HIPAA) restrictions mean and its impact on models of coordinated senior care.
- Integrate local HUD offices and state/local housing agencies with state falls prevention coalitions to help each understand and better coordinate services for seniors. Educate public health and healthcare professionals on housing issues related to senior community-based settings and vice versa.
- Create a Wellness coordinator and/or train on-site HUD staff to conduct senior assessments, coordinate onsite (as feasible) evidence-based intervention programs (e.g., nutrition, balance) and work with local public health and housing departments.
- Standardize building codes to ensure homes are safe for all ages, including seniors. Codes do not have to be onerous and states/localities can still have their own if better. Nationally standard codes with basic elements that ensure safety in the home regardless of age or where someone lives could address key housing/environmental issues that increase fall risks.
- Integrate or require visitability and universal design in all federally or state subsidized housing – regardless of the target audience – to ensure housing units can be readily adapted to meet growing/changing demographics. Universal design should be embedded in housing trust fund programs and/or have tax incentives for private developers.
- Invest in "Age-Friendly" communities and perhaps a movement that creates certifications, similar to LEED (Leadership in Energy and Environmental Design), for housing built to "senior" standards. This would elevate and integrate the role of the physical environment in fall prevention policies, and support universal design and development measures in both new developments and housing rehabilitation (e.g., upgrades to existing HUD properties). It would also provide savings related to healthcare as well as additional community benefits to seniors.
- Create a universal "Community Health Worker" credential so that the credential in Vermont means the same training as the credential in Texas or Oregon.
- Make changes to program funding requirements. Because of difficulties related to implementing "evidence-base" of programs, utilize an approach similar to that used by OSHA in which, rather than

specify a specific program or type of program, a potential grantee outlines which critical elements, based on an OSHA approved list, will be included in a program before it can qualify for a grant. This would provide communities more flexibility to craft interventions/programs to better meet their community residents and needs.

- Avoid mandated certification programs. Few panelists want policies that would mandate certifications/credentials beyond what already exists (e.g., nurse practitioners, community health workers, social workers) because they worry it could curtail work already in progress. Panelists expressed interest in helping expand the workforce and thought the need for certifications would have the opposite effect.
- Create a robust, national education and awareness campaign to help communities understand what is needed now and what will be needed in the future to address the aging population (e.g., Market and Brand Falls and Home Safety). The campaign could include information about the preventability of falls, but the real focus would be on overall senior wellness and healthy community living. It could include outreach to seniors about the home environment (Home-Safe Pamphlets for all ages to avoid any senior related stigma, similar to lead-safe pamphlets geared toward children); outreach to underserved and low-income communities; and a repository of information to help seniors (and their families/caregivers) find and access local resources. The campaign could also reach out to younger adults (i.e., younger than age 65) to encourage earlier personal interventions and physical activity to reduce fall risks as they age.

### **General Comments: What's the Future of Fall Prevention?**

Nearly every panelist stated that they would like to see a more holistic approach being taken with falls and senior care in general. One panelist indicated their local coalition changed its name from the *Falls Prevention Coalition* to *Safe Aging Coalition* to better reflect their broader goal of helping seniors age safely. Other panelists talked about the need to take a broader approach to how injuries and falls are addressed, indicated that they wanted better integration of services and coordination at the community level so organizations and agencies are less siloed.

The Panel seemed to be somewhat divided on the attention paid to falls prevention and senior care in general. On the one hand, some panelists believe there is a huge momentum growing around the need for fall prevention programs and that it is becoming higher profile for various federal agencies. On the other hand, several practitioners think it is still too low of a priority; they hope the future will find it elevated in the public in general and in the public health sector.

A few panelists stated that HUD and other federal agencies should be working more closely with the private sector, looking at ways to build or create more active, age-friendly communities, integrate smart growth into community development activities, and include senior housing as part of new urbanism efforts. Panelists also expressed hope that more preventative actions will be taken by both seniors and public health professionals *before* falls occur and that the field becomes more proactive versus reactive to how the potential of falls is addressed.

The main observation that emerged from the individual panelist discussions as well as from the joint discussions is that a more coordinated approach, from funding to services, is needed as the population ages. Further, while preventing falls among the elderly is definitely important, it should not necessarily be a "stand-alone" project; it is more appropriate as one element of an overall system supporting seniors, especially those interested in aging in place.

Additionally, although great strides have been made in the past five years to address senior falls and improve coordination of senior care, panelists believe that much more must be done, and at a faster pace, to meet the growing needs of our aging population. Panelists appeared heartened by HUD's interest in the issue and encouraged by recent collaborations with the Centers for Medicare and Medicaid Services.

### III. Development of the Senior Falls Prevention and Coordinated Care Toolkit

As Solutions conducted its literature review and one-on-one discussions with members of the expert panel, the project team also began identifying and collecting potentially relevant articles and materials to guide development of the Senior Falls Prevention and Coordinated Care Toolkit. The Toolkit is intended to help public- and private-sector policy and program stakeholders navigate and overcome obstacles in developing and implementing senior falls prevention and coordinated care programs. The Toolkit addresses four key areas:

1. The impact the growing senior population has on society and why steps must be taken to address healthcare concerns such as falls prevention;
2. The type of partners and stakeholders needed to promote and implement successful senior falls prevention and coordinated care policies and programs;
3. Current and potential funding resources, including governmental and philanthropic, available to help create and sustain effective fall prevention policies and programs; and
4. Actions needed to sustain fall prevention policies and programs over the long-term.

A draft outline of the Toolkit was submitted to HUD OLHCHH for review in mid-October 2016. Receiving no feedback on the outline, the project team began creating the document, reverting to the outline originally suggested by OHLCHH.

In developing the Toolkit, Solutions reviewed materials and toolkits developed by organizations such as the CDC, the National Council on Aging (NCOA), the American Occupational Therapy Association (AOTA), NeighborWorks America, Rebuilding Together, Enterprise Community Partners, the American Association of Retired People (AARP), and many other groups active in aging-in-place and fall prevention activities to determine what information would add the most value to the Toolkit. Solutions also reviewed current and past legislation to ensure that the financial resources and grant information identified in the Toolkit were up-to-date.

The information and actions outlined in the Toolkit also reflects feedback Solutions received during the course of the one-on-one discussions with members of the expert panel and the joint panel discussions held during the webinars. Panelists provided input on the types of information and materials most useful to professionals working to help seniors safely age in place.

The Toolkit highlights numerous funding resources and includes the rationale for outreach to non-traditional partners to improve delivery of services and care to seniors. Rather than duplicate materials and information included in toolkits developed by other entities such as the CDC and NCOA, this Toolkit provides important information to help partners bridge the gap between their specific disciplines and areas of interest. For example, although senior fall prevention programs are often under the purview of public health agencies, housing and community development entities also frequently provide key services to support seniors aging in place. The Toolkit is designed to help aging and public health professionals learn more about the key players in the housing and community development field to

identify potential partners and vice versa. The Toolkit also provides links to further information and resources to assist users learn more about available funding and mechanisms, such as Community Needs Assessments and Comprehensive Planning, in other sectors in which they can provide input.

A draft of the Toolkit contents (i.e., without graphics) was provided to OLHCHH to review November 23, 2016. Initial comments and feedback were returned to Solutions on December 21, 2016 and a conference call hosted by Solutions was held the following day, December 22 to discuss potential graphics and layout of the document. Text revisions to the Toolkit, based on HUD feedback were returned to OLHCHH on December 27, 2016 for review by a broader HUD team. A proposed mockup of the graphics for the Toolkit was delivered to OLHCHH on December 27, 2016, and Solutions received feedback on the mockup the following day (December 28, 2016). It was agreed that no additional action would be taken with the mock-up until Solutions received feedback and comments from the larger HUD team.

Solutions received additional HUD comments and feedback on the drafted text for the Toolkit on February 9, 2017. As requested, the layout and graphics of the final Toolkit was created using InDesign publishing software and delivered to OLHCHH as a PDF file on February 23, 2017.

A copy of the Toolkit is available in the Appendix.

#### IV. Recommendations for Senior Falls Prevention and Coordinated Care

As previously noted, both the literature review and panel discussions emphasized that a majority of seniors would like to age in place, i.e., remain in their homes for as long as possible. Significant evidence shows that integrating healthcare delivery with housing services helps community-based seniors remain in their homes as they age and reduces healthcare expenditures, i.e., coordinated care improves seniors' health outcomes and reduces costs associated with the need for long-term assisted care. However, reports such as the BiPartisan Policy Center's (BPC) *Healthy Aging Begins at Home*<sup>4</sup> indicate our communities currently lack the necessary services and supports, from an adequate supply of affordable, safe housing to healthcare delivery services, to help seniors safely age in place. Although the review and discussions, as directed by HUD's Task Order, focused primarily on falls prevention among the elderly, the broader findings reveal senior falls prevention is just one element of a larger national health concern, i.e., current housing and healthcare systems are not prepared for aging communities in the U.S.

Moreover, although injuries and deaths from senior falls are of grave concern, much of the literature and the panel discussions highlighted that no overall system of care exists to coordinate senior care or prevent senior falls; current practice as seniors age is to have them transition to a nursing home or assisted-living facility. However, many seniors, especially those who are low- to moderate-income do not have the resources necessary to make such a transition. Consequently, a broader approach to senior care and environmental hazards could not only significantly reduce senior falls, it could also improve senior care and the overall quality and length of their life. Several expert panelists cited recommendations outlined in the BPC report and advised that, as appropriate, they be incorporated into the proposals provided in this report. The overall sentiment from the literature review, panel discussions, and BPC report is that a holistic, comprehensive and coordinated approach should be taken,

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<sup>4</sup> Released by the BiPartisan Policy Center (BPC) in May 2016. Available at <http://bipartisanpolicy.org/library/recommendations-for-healthy-aging/>

not only to reduce senior falls, but to also improve seniors' quality of care and reduce burgeoning healthcare costs<sup>5</sup>.

Many of the recommendations contained in this report go beyond HUD's primary mission of affordable housing and will require greater collaborative efforts with other federal agencies, such as the Departments of Health and Human Services and Transportation. While some may also require the appropriation of additional funding to at least one or more agencies, it is anticipated that the recommended actions could lower overall federal health and housing expenditures for seniors over the long-term.

Additionally, although the following recommendations are provided according to various themes that emerged during the course of this project, it is important to note they are not intended to be "either / or" proposals; several could easily have been categorized under more than one theme and many will only be successful if integrated with other proposed recommendations. For example, although "Health" and "Housing" are listed as separate themes, many recommendations under each theme could, and should, be undertaken as joint endeavors or on a collaborative basis.

### **Coordinated Care and Funding**

Many believe that the current funding system sets artificial barriers between housing and healthcare funding streams and programs when these programs should work hand in hand. Funds for senior housing and healthcare services are often tied to a specific individual or activity as well as administered by numerous agencies without apparent systematic coordination between the agencies. The consensus is that senior care is best served via a flexible program and funding approach akin to population health management (PHM)<sup>6</sup>, which allows providers to spend as much time as needed with each client/patient, as dictated by their specific circumstances, and provide a range of services individualized to the needs of the senior.

Moreover, it is time to revamp the siloed fashion in which senior care and housing is currently approached to promote an overall "systems" change that addresses how senior care is provided and funded. Rather than promoting time limited interventions or programs designed to address a singular issue (e.g., senior falls prevention) in isolation from others (such as housing, active living, healthcare), funding and models of coordinated care that promote patient-driven programs and interventions that address multiple issues in a coordinated, complementary fashion should be encouraged. Promote models such as SASH, PACE, and MediCaring Communities, which embrace a PHM approach to senior care and ensures various types of interventions, ranging from home modifications to strength and balance training, are available to seniors to help improve their care and quality of life based on the specific needs of the individual senior.

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<sup>5</sup> The BPC report also included numerous recommendations to address the inadequate supply of affordable senior housing. Although the work performed by many of the panelists support low-income seniors, based on the requested focus of the Task Order, i.e., falls prevention, the availability of affordable housing was not specifically addressed nor considered during panel discussions.

<sup>6</sup> A Population Health Management (PHM) approach has been shown to improve health outcomes while lowering healthcare costs. Under PHM, a team of healthcare providers is coordinated with community service and affordable housing providers to meet individual senior's needs by increasing their access to health care and coordinating the various services and supports they needs to safely age in place. More information about PHM can be found at [www.nahc.org/news/population-health-management-best-practices-for-treating-aging-patients/](http://www.nahc.org/news/population-health-management-best-practices-for-treating-aging-patients/).

Shifting the healthcare and housing delivery systems to prioritize self-directed, person-centered care can help move away from long-term institutionalized care and improve in-home and community-based care options. It can also help achieve a triple bottom line target that improves senior care, community health, and reduces the cost of senior services. However, as the National Association of Area Agencies on Aging (N4A) points out, this type of effort will require changes within "historically rigid and resistant" models of care delivery, especially at the healthcare level, to recognize that, what happens at home and in the community impacts an individual's health, recovery, and well-being.<sup>7</sup> The following recommendations are based on the premise that comprehensive coordination of both services *and* funding is needed to meet challenges connected to the communities' growing senior population.

### **Improve Interagency Coordination**

Create policies that not only support but *reward* coordinated/interagency efforts around senior falls prevention and coordinated care. Agencies as well as "policies" are often siloed, creating artificial barriers in how funding and services are provided. For example, a senior's home is often the best place to provide ongoing care and coordination of services; in many instances, however, funding from one agency (e.g., HUD) often may not be used to support services that fall under the bailiwick of another sectors (e.g., health care). Conversely, home modifications, which could reduce costs related to senior falls, are rarely covered by healthcare funding. Studies support the concept that broad strategic planning across various agencies (and various levels of government, i.e., federal, state, and local) and service providers could ensure programs are effective and sustainable. (Child et al. 2012) (Hester and Wei 2013) (Bezaitis 2008).

### **Create Dedicated Funding Targeted Specifically to Senior Care and Healthy Living**

Create a dedicated and coordinated funding stream to support aging-in-place, senior safety at home, and continuous care models. A dedicated funding stream could be created by coordinating funding between all agencies that currently fund senior projects. Any increases to agency funding could be provided under the condition that the various agencies coordinate their programs/efforts as well as demonstrate that the coordination of services is reducing overall healthcare costs by improving the health and wellbeing of seniors and helping them remain in the community versus transitioning to long-term institutional care. The same level of coordination should be required for funds that go directly to state and local governments in the form of Community Development Block Grants (CDBG) or other federal grants.

### **Allow a Flexible, Capitated Payment System for Senior Healthcare and Housing Services**

Expand the use of capitated payment models for senior healthcare and housing services in which funding is not restricted to a specific individual or service, but instead is provided based on a pool or "portfolio" of beneficiaries. Many managed care organizations use capitated payment systems to control healthcare costs and, under its Financial Alignment Initiative, CMS has been exploring capitated models with states and healthcare plans to provide comprehensive, coordinated healthcare.<sup>8</sup>

A flexible or capitated payment model allocates a set amount of funding per program participant for a specified period regardless of whether or not a participant seeks care during that time. Participants within the pool or portfolio would range in age and have various housing and healthcare needs. Provider payments would be based on the average expected use of services by enrolled clients. For example,

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<sup>77</sup> Learn about N4A's Senior Health policy priorities at [www.n4a.org/files/n4a\\_2016PolicyPriorities\\_Health.pdf](http://www.n4a.org/files/n4a_2016PolicyPriorities_Health.pdf).

<sup>8</sup> Learn more about CMS's Capitated Models at [www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/CapitatedModel.html](http://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/FinancialAlignmentInitiative/CapitatedModel.html)

funding for an older individual who might need more healthcare or housing services would be higher than funding for another younger enrollee in relative good health. Because providers would not need to deliver the same level of care to all participants within the portfolio, they would be able to tailor services to each client based on specific circumstances of the client, providing additional time and services when necessary. Participating service providers would be required to meet a standard quality of care to ensure all enrollees receive the services and care they need.

Programs such as the Vermont SASH have successfully used capitated payment systems to coordinate, and improve, the care offered to program participants. Expanding payment models to include assessments and housing services such as those offered under the CAPABLE program which works with local community development groups to provide home modification services, would allow more seniors to remain safely in their own home in their community.

### **Broaden Allowable Uses of Medicare/Medicaid Waivers**

Encourage the use of Medicaid waivers and managed care plans for assessments and interventions, as well as for seniors' home modifications. Expenditures for Medicare and Medicaid, programs designed to help cover healthcare costs for seniors and the low-income, could be reduced if funds could be used to provide home modification interventions that help participants live in safer, healthier homes. Expanding Medicare coverage<sup>9</sup> to include home modifications and a broader range of practices would help seniors age-in-place, e.g., allow both Medicaid *and* Medicare funding/reimbursement for physical, cognitive and home assessments, training with assistive devices, home modifications, and other activities that support seniors aging-in-place. Similarly, expand pots of money from programs such as CDBG, Older Americans Act (OAO), and Americans with Disabilities Act (ADA) to cover modifications, such as ramps, chair slides, which allow seniors to remain at home. These actions could also drastically reduce funding needed for nursing home facilities.

### **Revise Funding Requirements.**

Funding for many senior care interventions such as home modification or fall prevention programs require they be "evidence-based." In theory this practice ensures programs are proven to be well-tested, scalable, and replicable, i.e., that they work before they receive funding. However, the effectiveness of fall prevention programs and home modifications can vary according to seniors' behavior and physical state, and what works in an academic setting may produce the same results in the community. Moreover, requiring a program to be "evidence-based" may limit a local jurisdiction's ability to test new concepts or even use time-tested models that have proven effective in their community. Additionally, communities may create a successful program, but lack the funding to undergo the rigorous analysis necessary to receive a designation of "evidence-based." An approach similar to that used by the Occupational Safety and Health Administration (OSHA) could address these issues. Rather than specify a specific program or type of program for funding, OSHA identifies a key set of eight to ten critical elements that must be included in an intervention or program to be eligible for funding. This approach would provide communities the flexibility to craft interventions and programs that better meet specific needs of their community and its residents.

### **Reauthorize and Fund Community Innovations for Aging in Place (CIAIP)**

CIAIP should be reauthorized and funded to help provide communities technical assistance (TA), training, and the support needed to design, develop, and implement programs that address challenges

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<sup>9</sup> Currently, Medicare may be used for durable medical equipment, such as wheelchairs, hospital beds, and scooters, as prescribed by a physician; funds may not be used for permanent home modifications such as grab rails or ramps.

community-based seniors often encounter as they age in place. CIAIP, which was originally funded from 2009 to 2012 and administered by the U.S. Administration on Aging (AoA), helped identify best service delivery practices and encourage long-term systemic solutions and community changes to support seniors aging in place. Initial CIAIP grantees identified numerous barriers to aging in place as well as many issues critical to effective service delivery, including management of care, evidence-based interventions and programs, outreach and education, and physical recreation. Many of the grantees provided or linked elderly residents to coordinated health care and social services. Collaborations between numerous community agencies, ranging from area agencies on aging (AAAs) and local health and social service providers to housing and community development organizations were found essential for success. Many of the approaches adopted by CIAIP grantees to help make communities more age friendly and reduce barriers to aging in place could be used as starting points for future grantees.<sup>10</sup>

## Health

Although a large number of programs focused on senior care may fall under the realm of healthcare versus housing, there are many ways HUD and other federal agencies can work together to help improve delivery of services to seniors at the local level. As previously noted, one prominent measure would be to ensure all programs targeted to seniors complement each other and are developed with a clearer understanding of the senior's life and home circumstances. For example, a prescription that calls for more exercise or balance training without addressing home and other environmental hazards is as shortsighted as home modifications without addressing the physical conditions of a senior.

### **Improve Utilization of Annual Medicare Wellness Visits**

The annual Medicare Wellness Visit can help regularly evaluate the physical and cognitive well-being of a senior. Physicians should incorporate more fall risk assessments into the annual visit as well as include questions that address the social and environmental determinants of health. Questions should go beyond blood pressure to include inquiries about home stability and food such as whether the senior has access to adequate amounts of healthy food, if they have had to move more than once in the past year, and if they live in supportive housing. If these questions exceed the amount of time a physician usually spends with the senior during the Wellness visit, the questionnaire process could be assigned to another healthcare professional as long as they are incorporated into any considerations of the senior's care. Moving medical care to include social determinants that impact health can help reduce costs and lead to improvements in quality of life. CMS is already paying more attention to social determinants and working with accountable care organizations to incorporate these measures into their standard practices, but doing more to promote these steps across the board might allow funds to be reallocated from nursing homes and other long-term facilities to community-based services designed to help seniors age in place.

Additionally, unless a senior is homebound, the annual Wellness Visit occurs in the doctor's office. An effort should be made to utilize this opportunity to also evaluate a senior's home environment by holding the annual visit at the senior's home on a bi- or tri-annual basis. This would allow the physician (or occupational therapist) to make observations about the senior's ADLs and IADLs which, if the senior is function well, would trigger nothing or could lead to specific actions/prescriptions to help remediate perceived problems. For example, a frail senior might receive a prescription for an Otago exercise

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<sup>10</sup> More details and information about the Community Innovations for Aging in Place demonstration can be found at [www.ciaip.org/](http://www.ciaip.org/).

regime or regular nurse visit. A prescription for home modification might lead to those modifications being eligible for reimbursement by insurance or Medicare.<sup>11</sup>

### **Improve and Expand Referral Systems**

Much of the supports seniors need to remain healthy and safely age in place are outside the walls of hospitals and clinics. Expanding and improving referral systems to make sure seniors and their caregivers are being directed to the resources and services they need is essential to the wellbeing of the senior. Just as essential is ensuring a smooth handoff from one provider to the next, with appropriate reimbursement to service providers at every level. Two main elements are needed to improve the current referral system: 1) identification of resources and services available in the community; and 2) reimbursement to both medical providers for the referral services and to the community service providers offering the prescribed program so that seniors can move from the healthcare setting to the home setting with seamless care.

### **Expand Coordinated Care Demonstrations. Make Successful Demonstrations Permanent**

The *U.S. Department of Health and Human Services (HHS)*, especially CMS, has introduced numerous initiatives and demonstrations in recent years to coordinate senior care and help the elderly safely age in place. Programs such as PACE, Independence at Home, Medicaring Communities have shown significant success in lowering senior healthcare expenditures while improving senior care. CMS should move to make successful demonstrations permanent programs available nationally.

In addition to monitoring these programs to track costs and benefits such as accrued health care savings and improved senior health (e.g., reduction of senior falls), CMS should consider making the best models of coordinated senior care part of the public health surveillance system (similar to vaccines) to evaluate the impact of the models on health, housing, and healthcare costs.

### **Housing and the Built Environment**

Although many of the recommendations contained in this report involve multiple agencies, the following, geared toward housing and the built environment, are meant specifically for HUD as the lead agency of affordable housing. Housing is of particular importance to coordinated health and senior falls prevention because of the amount of time seniors spend at home and its potential as a centralized site to provide essential health and wellness services to seniors, especially low-income seniors. As the BPC report highlights, many seniors lack the fund necessary to cover costs related to long-term service supports and home modifications, which are necessary for them to remain independent in their existing homes. HUD programs such as Section 202 are key to helping seniors receive the care they need while remaining in the community. Expanding and improving Section 202, along with other community-based service delivery programs, and increasing access to affordable housing that allow seniors to age in place are much more cost effective approaches than long-term institutional facilities. Models and programs that deliver healthcare and other services to seniors, including fall prevention interventions, in their homes/home communities have a high potential to improve health outcomes and reduce healthcare costs and utilization.

### **Promote More Housing *Plus* Services Models in Affordable Senior Housing**

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<sup>11</sup> Permanent home modifications are currently non-reimbursable under Medicare/Medicaid and the vast majority of healthcare insurers.

Delivering supportive services, including healthcare, to seniors in affordable housing settings helps reduce the need for seniors to transition to assisted living or long-term care institutions or the use of more expensive healthcare services such as emergency departments. Senior housing properties should be encouraged to partner with licensed service providers to coordinate and deliver healthcare services to senior residents. Because these service providers are regulated by government agencies who oversee the quality of their work, they would not be considered unregulated assisted living environments.

### **Increase Investment in Senior Affordable Housing**

There has been a downward trend in federal investment to build housing and the market has not kept pace with the need for affordable senior housing. Section 202 funding should be increased to meet affordable supportive services and housing needs for the growing population of low-income seniors. It, along with other federal funding programs, could also be used to rehabilitate and modify existing senior housing to ensure residents can remain in their homes as long as possible to reduce the strain, both on the senior and community, of transitioning them to long-term care facilities.

### **Create New Supportive Housing Programs for the Elderly**

With the growing population of seniors, in addition to increasing funding for rental assistance programs for seniors such as Section 202, create and fund new programs for senior-supportive housing that use project-based rental assistance and Low-Income Housing Tax Credits (LIHTC) to support new construction and attract funding for services from health care programs. This program would be targeted to hospitals and healthcare systems interested in working with their communities to expand the supply of senior housing to leverage funding for seniors services from health care programs

### **Promote Strong Partnerships between Community Development and Affordable Housing Providers with Healthcare Providers and Community Health Workers (CHWs)**

Build bridges and promote more connections between health and housing by promoting and supporting evidence- and community-based models that train and connect housing and community professionals with medical profession (and vice versa).

### **Engage Community Health Workers**

Many elderly individuals are reluctant to let services providers into their homes. Seniors often worry that, if they request help or modifications to their home, landlords will evict them or service providers will determine they are unable take care of themselves and have them removed from their home. Because CHWs live and work in the community and are known entities, often they can help bridge this gap. CHWs can work with seniors to assure them of their rights (i.e., fair housing laws and state and federal protections), and connect them to healthcare and community development service providers who can assess their healthcare and fall risks and, as necessary, help modify their homes or provide exercise regimes to improve their strength and balance.

### **Build Awareness about Health, Community Development and Housing**

Bridging the gap between housing and healthcare providers would build a better understanding of the need for individual and home assessments, before a fall or other health incidence occurs, as well as help create models of care for community-based seniors prior to their returning home after an initial emergency room visit or hospital stay. It is important to educate public health and healthcare professionals on housing issues related to senior community-based settings – and vice versa -- so the two disciplines can communicate and work together to improve the services they are delivering to seniors in their communities. Programs such as CAPABLE, which team healthcare providers including

physicians and occupational or physical therapists with community development/affordable housing development and repair services, can be used as models of supportive services and housing for seniors.

HUD and HHS could also encourage collaborations between housing and healthcare providers to create a "healthy senior homes" medical designation that a physician could use to prescribe specific home modifications and/or use of technology and safety devices within the home for a senior. As a prescription, these items could potentially be reimbursable by insurance.

Local HUD offices and state/local housing agencies should collaborate with Aging in Place, Area Agencies on Aging (AAA), and state fall prevention coalitions to help each group understand the service(s) they provide (and their limitations) and how to coordinate and improve services for seniors.

### **Expand Capacity of Senior Housing Service Coordinators**

Section 202 providers are concerned about the well-being of the residents but often do not have the resources to address many of the problems and circumstances their residents encounter on their own. HUD could identify ways to more effectively support the service coordination needs of senior housing providers, particularly mission-oriented nonprofits. Although many providers have developed partnerships with local social service providers to help residents get access to the care and services they need, a more concerted effort should be made at the national level to ensure Senior Housing Service Coordinators receive adequate information and funding for residents. In some instances, Services Coordinators could also receive additional training to allow them to conduct basic assessments and act as Wellness Coordinators. Delivery of services would be provided by other agencies, such as the local Area Agency on Aging (AAA), but the Residential Service Coordinator would work with the senior residents to determine what services were needed and coordinate the delivery with the external agency. As feasible, some services, such as nutrition and balance classes, would also be offered on-site for residents as well as residents living in the surrounding community.

### **Create an Interagency Modification Assistance Initiative**

There is a great need for a national program and funding source to help modify senior homes to allow them to age in place. States and localities cobble together small amounts of resources as feasible, but given the overall cost savings that can accrue when seniors remain in their own home versus transitioning to long-term care facilities, more could be done at the federal level. A modification assistance program that coordinates federal resources for home modifications could be created to allow seniors to age in place. Funding would come from multiple agencies, such as HUD, HHS, and others at both the federal and local level, to reflect the reduced costs aging in place initiatives provide to overall federal and state budgets.

HUD could also provide incentives to states and local municipalities that establish and expand programs such as tax credits and rebates, grants, and/or loans (low and forgivable), and expedited permitting which facilitate health and safety home modifications for moderate- to low-income seniors to allow them to safely age in place. Incentives should be available to both homeowners as well as to property owners that serve moderate- to low-income seniors.

### **Promote Age-Friendly Home and Community Design Concepts and Development**

From building standards and codes to certifications, HUD could consider how to help create and promote more "age-friendly" communities and practices that allow seniors to age safely in place. HUD could encourage housing and healthcare organizations to work together to create a "sustainability"

rating for Age-Friendly housing and communities that support physical activity, safety and social engagement.

Investments in "Age-Friendly" communities could be made with the idea of creating a movement that potentially generates designations, similar to Leadership in Energy and Environmental Design (LEED), for housing built to "senior" standards. Creating such a designation would elevate and integrate the role of the physical environment in fall prevention policies and support universal design and development measures in both new construction as well as housing rehabilitations (e.g., upgrades to existing HUD properties). This could provide savings related to healthcare, as well as additional community benefits to seniors.

### **Improve Building Codes**

According to the BPC report, much of the current housing stock in the U.S. does not adequately meet the needs of the growing elderly population and will need to undergo some type of adaption or modification to help seniors safely aging in place. As **the cost to modify homes to meet seniors' needs is much higher than building homes that can be readily adapted to accommodate changing physical capabilities**, it is incumbent upon HUD to be proactive and begin planning new construction and housing to meet the needs of changing demographics. Although most building codes are adopted at the state and local level, there are many ways the federal government, especially HUD, can influence code development.

The National Healthy Housing Standards are a good first step to improving the safety of senior housing by incorporating measures that, among others, help prevent senior falls and scalding water. However, it is time to expand standards and codes to include universal design and visitability elements to ensure people have the capacity to "age in place." HUD could require all new and, as feasible, renovated housing and communities, regardless of target audience (i.e., senior or family) built with government subsidizes, including housing trust fund dollars, incorporate universal design and accessibility standards.

HUD could also work with the American Planning Association (APA), AARP, the International Code Council (ICC), HHS and others, to develop model codes and zoning ordinances specifically for senior housing that could be adopted by state and local jurisdictions. ICC codes are often adopted by state and local jurisdictions and more could be done with ICC to promote the National Healthy Housing Standards, including "senior" measures. Standardized building codes can ensure homes are safe for all ages (including seniors). Codes do not have to be onerous and states/localities can maintain what they currently have if they are better. Nationally standard codes, with basic elements that ensure safety in the home regardless of age or where someone lives, could address key housing/environmental issues that increase fall risks. Additionally, when HUD requires certain standards and codes in federally funded projects, other entities, from local jurisdictions to private developers, often follow suit.

Incentives such as tax credits could also be created to encourage private development of affordable housing with universal design elements to ensure that all housing can readily adapted to meet growing/changing demographics.

### **Increase Integration and Coordination of Senior Health Services in Affordable Housing**

HUD, with HHS, should sponsor more collaborative senior housing service and coordination demonstration projects and build on programs such as *Supportive Services Demonstration for Elderly Households in HUD-Assisted Multifamily Housing*. This innovative collaboration between HUD and HHS provides grants to senior multifamily housing providers to cover costs for a full-time Service Coordinate

and a part-time Wellness Nurse to coordinate supportive services with affordable senior housing. Building on the Vermont SASH model, the demonstration helps seniors living in HUD-assisted housing age in place and avoid transitioning to long-term institutional care. Coordinating healthcare services in seniors' home environments can help prevent healthcare events such as emergency room visits and hospitalizations that are sometimes unnecessary and often expensive. By supporting more demonstrations along these lines, HUD could determine the best approach to helping seniors age in place, while helping HHS reduce healthcare costs.

### **Improve Integration of Senior Housing and Care into HUD Planning Processes**

HUD could make a more conscious effort to ensure localities are integrating the needs of seniors into the planning process. Consolidated Plan instructions could be updated to require states and local jurisdictions more explicitly assess housing needs of seniors as well as evaluate the availability of age-friendly housing and community services. Where these needs are not being made, Consolidated Plans should be required to include proposals for how they will be met in the future with a timeline for action.

### **General Recommendations**

The following recommendations do not fit under a particular "theme," but commonly emerged in the literature review and panel discussions.

#### **Improve Education and Communication on Aging and Aging in Place**

Create a robust, national education and awareness campaign to help communities understand what is needed now and what will be needed in the future to address the aging population (e.g., Market and Brand Fall Prevention and Home Safety Measures). Helping identify and promote policies that support age friendly communities and aging in place, with managed senior care, can significantly reduce overall expenditures. Grassroots support comes from a better understanding of what the costs are and what actions, from exercise to home modifications, can be taken to reduce costs associated with senior care and housing.

Specifically in regard to falls prevention, even with the multitude of online resources available from agencies and organizations such as the CDC and NCOA, many people have little understanding about the causes of senior falls and the actions that can be taken to minimize risk. While seniors often think external factors, such as home and environmental hazards, are the major cause of falls, falls can more often be traced to the physical condition of an individual, i.e., functional capabilities and biological factors (Phelan et al. 2015). Modifying homes to make them more accessible and safer for seniors is just one step in reducing falls, and depending on the senior, may not be as effective as other interventions, such as balance and strength training. Moreover, the earlier people incorporate physical training into their daily routine the more they reduce their risk of falling as they age (Stevens, Noonan, and Rubenstein 2010).

In addition to more education, *how* the message is communicated may need to be changed. Although research shows that up to 30 percent of senior falls could be prevented by implementation of preventative measures, not enough individuals recognize they could benefit from these measures. With the staggering costs of senior falls, several studies recommend it is time for a large-scale education or social marketing campaign to help build public awareness of aging issues (Bezaitis 2008). Expert panelists, as well as the NCOA, recommend a shift from "falls prevention" to a more positive, healthy message, such as independent aging (Cameron 2015) and a broader approach to how we help our seniors safely age in place.

A National Education Campaign would include information about the preventability of falls, but the real focus would be on overall senior wellness and healthy community living. It could include outreach to seniors about the home environment with pamphlets outlining home-safety measures (similar to lead-safe pamphlets geared toward children); outreach to underserved and low-income communities; and a repository of information to help seniors (and their families/caregivers) find and access local resources. The campaign could also reach out to younger adults (i.e.,  $\leq 65$ ) to encourage earlier personal interventions and physical activity to reduce fall risks as they age.

### **Promote Increased Use of Technology**

Local jurisdictions should be encouraged to expand use of Geographic Information Systems (GIS) and other new technologies to pinpoint clusters of senior falls or areas in need of infrastructure investment. As seniors are encouraged to increase physical activities, greater attention needs to be paid to outdoor falls and the built environment. Sidewalks, streets and common structures in the surrounding community can contribute to falls in otherwise healthy seniors. Using GIS technology to understand where falls are occurring may help jurisdictions eliminate risks such as loose bricks, uneven sidewalks, and lack of sidewalk cuts to help reduce falls among seniors trying to stay fit and active. Increasing greenspace and walkways in and around senior housing, with benches and areas to rest, could help promote more physical activities among seniors. GIS could also be used to identify areas lacking an adequate supply of senior housing (Li et al. 2006) (Farber et al. 2011).

### **Promote Standard Research Formats**

Although there is an immense amount of research on aging, senior falls prevention, various interventions, and models of care, it is difficult to accurately compare studies and outcomes because there is little to no standardization between the studies. A research format should be promoted that includes key constructs and, at a minimum, expressly identifies 1) program or intervention goals; 2) steps and practices (including any intermittent steps); 3) length or duration of the intervention; 4) responsibilities of involved parties; 5) marketing protocols; 6) audience; and finally: 7) outcomes.

Along these lines, costs and benefits must clearly be identified to ensure "apples to apples" comparisons. Approaches to senior care may vary based on where that care is offered (i.e., rural versus urban, state to state), and not all states have the same guidelines on senior care and interventions nor do they offer reimbursement for the same activities. Policy makers need to understand that these variances impact delivery of services and costs of care. (Stevens et al. 2006) (Burns, Stevens, and Lee 2016).

### **Support Shared Data Systems and Community Level Care Coordination**

Provide funding to create and support a shared data system across all providers to better coordinate care. Although the Affordable Care Act (ACA) called for creation of an Electronic Data Sharing system, this system does not promote the level of data sharing needed to coordinate work between healthcare, housing and community service providers at the community level. A shared data system that provides healthcare and community-based service providers uniform information can help local communities build a menu of program offering based on the needs of community members and provide service providers easier access to resident assessments to determine future programs. Clearer information about what the Health Insurance Portability and Accountability Act (HIPAA) restrictions mean and their impact on models of coordinated care for seniors would also help improve community level coordination.

### **Encourage Uniform and Standard Training**

Encourage more uniform, standard training to improve communication and coordinated care practices. While communities may have their own needs and goals, uniform training for all senior care service providers can help improve seniors' standard of care and improve coordination between service providers. For example, although panelists were loath to recommend creating new credential processes or requiring that all services providers acquire specific credentials, there was consensus that creating a universal "Community Health Worker" credential which provided standardized training, would be beneficial because it would ensure that a CHW from Vermont has the same training as one from Texas or California. Additionally, it was suggested that all healthcare and senior housing and community service providers should receive training in senior assessments to identify fall risks and determine which seniors may be at high risk and in need of additional attention and potential interventions.

One specific recommendation was that the online training launched by the CDC in 2015 be expanded and targeted to physicians to help them become more familiar and at ease with senior falls assessments. Because the CDC's clinical decision support module can be integrated into a medical practice's electronic health records systems, it can facilitate coordination of clinical care with community-based prevention programs (Houry et al. 2016).

### **CONCLUSION**

The findings of the literature review and panel discussions indicate we must focus on how can housing environments support healthy aging and independence and seek housing and healthcare solutions that expand the current range of housing options to accommodate the varying needs and preferences of individuals as they age. Since experience shows that there is no "one size fits all" when it comes to senior care, it may be time to rethink how care is approached and coordinated to ensure seniors can safely age in place. A PHM approach, which allows providers to focus on the health and community service needs of a defined community of people and allows service providers the time to help participants take ownership of their health, could better serve seniors and help them safely age in their home and community.

These recommendations, although categorized according to various "themes" do not intend to suggest "either / or" decisions, e.g., increase funding for healthcare "or" focus on senior housing, instead they provide a basis for action which may call for initial increased funding to provide coordinated care that improves the health and wellbeing of our seniors while reducing overall federal expenditures. By working outside siloes and combining efforts, funds and expertise, Federal agencies can create systematic change that no individual agency would be able to accomplish on their own.

## APPENDIX

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# Overcoming Obstacles to Policies for Preventing Falls by the Elderly

Contract # DU203NP-15-D-06,  
Order #004

## Literature Review



*Prepared for*  
Office of Lead Hazard Control and Healthy Homes  
U.S. Department of Housing and Urban Development

*Prepared by*

**Healthy Housing  
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# 1 INTRODUCTION

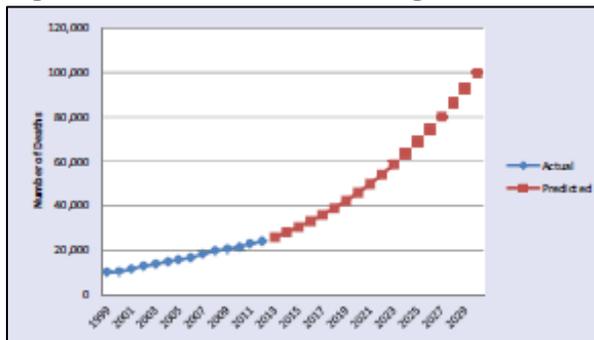
More than one-third of all adults 65 years and older fall annually, and more than half of these falls occur in the home. Fall risks increase with age: falls are four to five times more likely for adults age 85 and older than adults age 65 to 74 (Bezaitis 2008). Falls are the leading cause of injury, long-term disability, premature institutionalization, and injury-related mortality for the elderly. They are also the most common cause of traumatic brain injury and fractures. Fall-related injuries often lead to serious complications, including institutionalization, loss of independence, a paralyzing fear of falling, and even death. The National Center for Health Statistics reported that more than 27,000 adults 65 years and older died as a result of an unintentional fall in 2014. Moreover, the rate of fall-related deaths among U.S. adults age 65 and older has risen steadily, from approximately 29 per 100,000 in 1999 to 58 per 100,000 in 2014. Among those age 85 or older, the death rate was 241 per 100,000 (WISQAR 2014). Researchers consider many of these falls to have been preventable (Stevens and Phelan 2013).

According to the Centers for Disease Control and Prevention (CDC), injuries related to senior falls rank as one of the top 20 most expensive medical costs. By the year 2020, falls are projected to cost nearly \$60 billion. Although numerous interventions have effectively demonstrated how to reduce the incidence of falls, these do not seem to be gaining traction in the community as fall rates continue to increase.

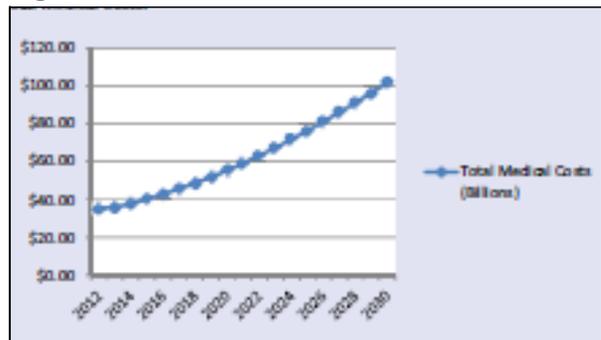
As part of the White House Task Force on Aging, the U.S. Department of Housing and Urban Development (HUD) committed to study and assess obstacles to instituting and implementing policies and procedures that help reduce and prevent falls by the elderly. This assessment will inform HUD, other federal, state and local agencies, nongovernmental organizations and the private sector about potential barriers and opportunities to reduce the risk of elderly falls to help guide the next administration as it strives to address this key issue.

This literature review explores and evaluates current research and resources on senior fall prevention to identify the most common cause(s) and risk predictors of elderly falls, especially in residential settings. It explores the impact of falls and related injuries on the individual, as well as, from a broader scale, how senior falls affect families, health care costs, and overall society. The review also considers current recommendations and guidelines as to how falls among the elderly can be reduced and prevented; attempts to identify obstacles to policy and program implementation; and explores some potential approaches and recommendations to overcome these obstacles.

**Figure 1. Fatal Falls in Adults Age 65+**



**Figure 1. Medical Costs Due to Fatal Falls**



Source: Houry et al. 2016 / The CDC Injury Centers Response to the Growing Public Health Problem of Falls Among Older Adults

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## 2 SCOPE

On behalf of HUD’s Office of Lead Hazard Control and Healthy Homes (OLHCHH), Healthy Housing Solutions, Inc. (Solutions) conducted a review of published literature to identify articles and studies that discuss the causes of elderly falls; related costs and impacts; barriers to policies and implementation of fall reduction and prevention programs for the elderly; and some of the current recommendations to help address this growing public health concern.

The literature review was conducted using PubMed, EBSCOhost, Google Scholar, and Google. Searches were generally limited to English-language only articles published primarily after 2006. In addition to the literature search, Solutions reviewed the CDC Injury and Prevention Control webpage; two Solutions’ reports, “HUD Healthy Homes Issues: Injury Hazards” and “Identifying Sources of National and Regional Data For Developing U.S. Benchmarks for the Healthy Home Rating System (HHRs)” (prepared for OLHCHH in 2013 and 2014, respectively); and several other fall prevention resource sites.

Searches were generally most effective by combining the word “elderly” (or a similar term such as “senior”) with “falls,” and one other term (as indicated in the table below). As necessary, the search strategy was tailored to the particular database used.

ELDERLY TERMS	FALL TERMS	OTHER TERMS		
ELDERLY	FALLS	Causes	Therapy	Funding
OLDER		Cost	Program	continuum of care
AGING		Government	Guideline	Holistic
SENIOR		Home	Health	Longitudinal
FRAIL		Home visit	Independence	Risk
		Housing	Recommendation	Intervention
		Residential	Laws	Barrier
		Policy	Financing	Injury*
		Home modification	Aging-in-Place	Baby boomer

\* Although the word "injury" was initially included as a search term, it was eventually discarded because it produced an overwhelming number of results that were not relevant to this specific review.

Over the past ten years, with the growth in the population of adults age 65 years and older, there have been a large number of research studies targeted to injuries and falls among this age cohort. Targeting searches of literature referencing residential settings, effective interventions, and barriers to implementing fall reduction and prevention policies and interventions, Solutions' preliminary literature search identified more than 600 potential sources, including numerous systematic reviews and meta-analyses of random trials of various fall prevention interventions and models. This review attempted to concentrate on material available from approximately 90 reports and studies published within the past ten years that were determined to be most relevant to overcoming obstacles to elderly fall prevention policies. Additionally, specific studies suggested by members of the expert panel were also reviewed.

## 3 CAUSES AND PREDICTORS OF ELDERLY FALLS

Research shows that many senior falls are preventable and often result from predictable risk factors (NCOA 2016; Houry et al. 2016; OIPP 2012). Consequently, although seniors fall more frequently than younger adults, falls should not be considered an inevitable consequence of aging (Ory et al. 2014). While age itself is not a risk factor, biological conditions often associated with advancing age, such a loss of muscle mass, poor eyesight and hearing, and chronic illness are the actual culprits or risk factors related to senior falls (Bezaitis 2008).

Although many studies attempt to examine specific causation, falls are generally broadly categorized as either "intrinsic" or "extrinsic." Falls caused by intrinsic factors are those directly related to the individual, including many that are often considered part of the normal aging process (e.g., muscle weakness, balance problems, poor vision, disease—both chronic and acute, and medication use). Falls characterized as "extrinsic" are caused by external factors, often relating to the senior's physical environment (e.g., home hazards, sidewalks; use of assistive devices [e.g., walkers and canes]); and inappropriate footwear (CDC 2015; Houry et al. 2016; Kronfol 2012; Karlsson et al. 2013). Studies also often further classify falls along the lines of behavioral, medical, or biological factors. Falls labeled as medical and biological often encompass the continuum of risk factors from those related to the healthy aging process to chronic or pathological conditions, while behavioral are tied to behaviors of seniors that influence their risk of a fall, (e.g., alcohol use, use of stepladders, lack of exercise) (Kronfol 2012). As people age, the role of extrinsic factors in senior falls declines and intrinsic factors, such as disease and chronic illness, become more prominent (Karlsson et al. 2013).

### Fall Risk Examples

Intrinsic	Extrinsic
Lower-extremity weakness	Inadequate lighting and glare
Impaired balance	Pets
Cognitive impairment	Clutter
Urinary incontinence	Uneven sidewalks
Sensory impairment (e.g., hearing and vision)	Home Hazards
Fear of falling	Inappropriate Footwear
Medications and medication interactions	Malnutrition
Gender	Sedentary Lifestyle

Adapted from AOTA Occupational Therapy and The Prevention of Falls Fact Sheet.

Available at <http://www.aota.org/~media/Corporate/Files/AboutOT/Professionals/WhatsOT/PA/Falls.pdf>

While a previous fall is the number one predictor or risk factor of a senior fall (Karlsson et al. 2013), there are numerous factors that can contribute to or potentially predict a fall. Seventeen independent risk factors for elderly falls, ranging from urinary incontinence and cognitive impairment to fear of falling, were identified by one systematic review of fall prevention studies that examined risks in community-dwelling seniors. The review also found significant interactions between a senior's functioning ability and the risk factors (Shubert 2011).

The most often cited causes of senior falls are gait and balance issues; loss of muscle mass and muscle weakness (especially in the lower body); chronic conditions ranging from cardiovascular disorders to arthritis, Parkinson's, and low blood pressure; impaired vision; medication side effects or interactions; home hazards; nutritional deficiencies (e.g., insufficient vitamin D); and behavioral issues (Stevens, Noonan, and Rubenstein 2010; Kronfol 2012; CDC 2015). At least 90 percent of seniors have one or more chronic conditions, such as diabetes, arthritis or stroke, which may increase the risk of falling by causing lost function, lack of activity, pain, or multiple medications (NCOA 2016). Although not often cited in literature nor apparently significantly researched, pets are also considered a fall risk for seniors (Stevens JA 2009).

Fear of falling can also be a major risk factor for a senior fall. While some fear of a fall may lend itself to a senior avoiding risky behaviors such as a stepstool, research has shown that it can also lead to a debilitating loss of confidence that results in restricted physical activity, loss of independence, and increased overall frailty, all of which can contribute to a future fall (Peterson 2011; Wong 2014)

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### 3.1 Who Falls

Although fall prevention research commonly cites the statistic that one in three individuals over the age of 65 fall annually, rates of fall injuries for seniors over 85 years old are four to five times greater than those for individuals aged 65 to 74 years old (Kronfol 2012). Seniors reporting fair or poor balance fall two to three times more often than those that report they have good to excellent balance (Albert et al. 2014). Several studies also indicate women fall more often than men (Karlsson et al. 2013) (Kronfol 2012). Fall risks are also exacerbated by mental health issues, such as dementia, depression, and anxiety (Bunn et al. 2014).

Once a senior falls, they are two to three times more likely to fall again (CDC 2015) (Karlsson et al. 2013). However, some studies have found that an outdoor fall may not necessarily be a forecast of poor health, especially if the senior was in overall good health prior to the fall (Kelsey et al. 2010).

### 3.2 Where Falls Occur

Home hazards or risk factors have been identified as causing approximately half of all falls (Bergen et al. 2008; CDC 2015). Indoor falls have been shown to increase with age, and 77 percent of indoor falls occur within the senior's own home (Kelsey et al. 2010) (Li et al. 2006). Many homes have potential fall hazards ranging from slippery floors and inadequate lighting to loose rugs and unstable furniture or obstructed walkways (Lord, Menz, and Sherrington 2006; Daniel et al. 2013). Some additional home environmental fall risk factors identified by the CDC include clutter and tripping hazards such as throw rugs; glare or poor lighting; lack of or loose stair railings; lack of or loose grab bars in bathroom areas; and broken or uneven stairs (CDC 2015).

However, while 50 percent to 80 percent of seniors treated in emergency departments cite a home hazard as the cause of their fall, such hazards are rarely sufficient to cause a fall. Instead, falls are more often caused by the interaction of environmental hazards with seniors' physical and cognitive conditions (Lord, Menz, and Sherrington 2006) (Li et al. 2006).

Although few studies differentiate where a fall occurs, risk factors for indoor versus outdoor falls do differ. Numerous studies have looked at where senior falls occur and found that outdoor falls were at least as common as indoor falls, and the characteristics of the seniors themselves contribute to where a fall occurs. Frail, inactive seniors are at a higher risk for indoor falls, whereas relatively active, healthier seniors are at higher risk falling outdoors. (Kelsey et al. 2010) (Li et al. 2006)

Nearly 50 percent of falls suffered by community-based seniors occur outside the home and are due to environmental factors such as uneven surfaces, or tripping and slipping on objects. Most outdoor falls occur on sidewalks, curbs, streets, and outdoor stairs. Fourteen percent of outdoor falls happen in the senior's own yard or garden. Seniors that fall outside tend to be younger and healthier than those who fall indoors and their lifestyles more often indicated better overall health. Moreover, unlike most indoor falls, a senior fall outside is not necessarily a harbinger of impending poor health. In fact, studies found that those who fell outside were at least as healthy as people that had not experienced a fall at all. Researchers also found that although some studies showed an increase in one-year mortality rates after an indoor fall, there was no increase in mortality associated with outdoor falls. The most common activity connected to outdoor falls was walking (Kelsey et al. 2010) (Li et al. 2006).

### 3.3 Relationship between Fall Risk Factors

As previously cited, there are many reasons the elderly fall and falls are rarely caused by one issue. More often than not, numerous factors converge to cause a fall (CDC 2015; Bezaitis 2008; Peterson 2011). While a single factor may be blamed for a fall 19 percent of the time, 78 percent of all falls involve four or more risk factors (Houry et al. 2016). Fall risk factors also have multiplicative interactions versus

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additive interactions. For example, an individual over the age of 65 has a 10 percent chance of falling whereas someone older than age 80 has a 20 percent chance. Individuals with an impaired gait have a 30 percent risk of falling. Combining both factors for an 80 year old (i.e., age and impaired gait) results in a 60 percent risk of falling along with a corresponding increase in medical expenses (Ling et al. 2008).

While not all senior fall risk factors or causes of falls can be eliminated, the CDC has identified several factors that could potentially be reduced or eliminated through appropriate intervention(s). These include muscle weakness, gait problems, some medication use, vision impairments, and home hazards (Kaniewski et al. 2014) (Karlsson et al. 2013). Moreover, due to the complex interaction of fall risk factors, many researchers believe that interventions should attempt to address as many factors as possible (Karlsson et al. 2013).

## 4 IMPACT and COSTS OF ELDERLY FALLS

Unintentional falls are the leading cause of fatal and nonfatal injuries among adults age 65 years and older (Houry et al. 2016; Cameron 2015; Stevens, Noonan, and Rubenstein 2010), and the leading cause of death for adults over 72 years old (Bergen et al. 2008). While most senior falls result in minor injuries, 20 to 30 percent of seniors suffer moderate to severe injuries, such as lacerations, broken bones (e.g., wrist, ankle, arm and hip), dislocations, or severe head injuries. More than two-thirds of the traumatic brain injuries (TBI) seen in seniors are caused by falls (Shubert 2011). Although only one to two percent of falls causes a hip fracture, more than 90 percent of hip fractures caused by a fall are suffered by people age 65 years or older, often because their bones have lost some strength and are more susceptible to breaking, even from a minor fall (Cameron 2015; Stevens, Noonan, and Rubenstein 2010). Seniors whose fall result in a hip fracture also have a 20 to 30 percent mortality rate within a year of the event (DeSure et al. 2013).

Falls have become the fifth leading cause of death for adults age 65 years and older (Lawson 2014), with the number of elderly adults who died as a result of falls topping 27,000 in 2014 (WISQAR 2014). The number of fall-related deaths increases with age regardless of sex; however, women die from a fall approximately 20 percent more often than men, with a third of those deaths occurring in women age 85 years or older (Burns, Stevens, and Lee 2016). Additionally, the rate of fall-related deaths in the U.S. for adults age 65 or older has risen steadily over the past decade from about 29 per 100,000 in 1999 to about 58 per 100,000 in 2014. Among those age 85 or older, the death rate was 241 per 100,000 (WISQAR 2014). Many researchers believe some of these deaths were preventable (Stevens and Phelan 2013).

### 4.1 Personal and Family Impact

While any type of fall can limit function, thwart a senior's ability to live independently, and reduce their quality of life, hip fractures often require long-term care and some may even require admission to a nursing home (Stevens, Noonan, and Rubenstein 2010). Nearly 30 percent of seniors that sustain a hip fracture from a fall are not able to reach functioning baseline levels a year later (Houry et al. 2016). More than 40 percent of seniors hospitalized after a serious injury, such as a hip fracture or head injury, will not be able to live independently, which means it is unlikely they will be able to return to their own home (Bezaitis 2008; CDC 2015). Even seniors able to return home may face difficulties and will require some assistance with long-term services and supports (LTSS) such as help bathing and dressing, preparing food, and managing their medications. LTSS are not covered by Medicare and can rapidly exhaust a senior's budget and income (BiPartisanPolicyCenter 2016).

Even a fall that causes no noticeable injury can instill fear of falling into a senior, which may lead to them restricting their physical activities, creating a domino effect on their health (Cameron 2015; Stevens, Noonan, and Rubenstein 2010; Ganz, Alkema, and Wu 2008).

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## 4.2 Emergency Department Treatment and Hospitalization

Falls among the elderly contribute to 13 million medically treated injuries (Avin et al. 2015). In fact, older adults are seen in hospital emergency departments for a fall every 13 seconds. In 2013, about 2.5 million older adults were treated in emergency departments from unintentional falls; 734,000 were hospitalized and 25,500 died (Cameron 2015; Stevens, Noonan, and Rubenstein 2010; Houry et al. 2016).

Seniors also end up hospitalized for fall-related injuries five times more than for other injuries. Seniors age 75 years and older are four to five times more likely than their younger counterparts to enter a long-term nursing facility for at least a year after a fall; some may never be able to return home (Stevens, Noonan, and Rubenstein 2010).

## 4.3 Costs<sup>1</sup>

The most fatal and costly fall injuries are those to the brain and lower extremities (i.e., hips, legs, and feet). Respectively, they account for 78 percent of all fatalities related to falls and 79 percent of costs. Nonfatal fractures account for approximately 61 percent of fall-related costs and are the most common and costly fall injuries (Hester and Wei 2013). A 2013 report from the National Council on Aging (NCOA) found that direct health care costs attributed to fall-related injuries totaled \$34 billion, and the average cost of hospitalization for a fall injury was over \$35,000 (Cameron 2015). This amount exceeds the predicted 2020 annual costs of \$32 billion made by some researchers just ten years ago (Li et al. 2006). It also highlights the challenge of determining costs associated with falls among the elderly.

Although the economic burden of elderly falls is broadly acknowledged, because data sources and cost categories often vary from study to study, it is very difficult to compare costs related to senior falls from the different studies and reports. For example, an often-cited 2006 study found that 63 percent of costs related to senior falls were for hospitalization, 21 percent were for emergency room visits, and 16 percent could be attributed to outpatient visits. However, these costs were not averaged across treatment settings, gender or age group. More importantly, until recently, the costs had not been adjusted to reflect the increased population of seniors older than 65 years of age nor the increase in healthcare costs over the past ten years (Stevens et al. 2006) (Burns, Stevens, and Lee 2016).

In 2016, in an effort to bridge this data gap, a group of researchers attempted to update the 2006 costs report to account for the growth in senior population and inflation. However, it is important to note that these cost estimates still fail to address recent changes in healthcare costs. Over the past ten years, healthcare costs have been greatly influenced by legislative actions (e.g., additions to Medicare and the Benefits Improvement and Protection Act), technology, and a rise in chronic conditions among older adults. With these caveats, conservative estimates found that the direct medical costs related to senior falls in 2015 was \$31.9 billion; \$637.2 million was attributed to fatal falls and \$31.3 billion to non-fatal falls (Burns, Stevens, and Lee 2016).

Of these costs, approximately two-thirds are hospital costs, with the average hospital charge for a fall injury in 2016 coming in at approximately \$35,000. Medicare covers about 78 percent of the costs of falls (CDC 2016a; Stevens et al. 2006).

Gender and age group also matters when it comes to fall-related costs. Overall, such expenditures for women, who comprise approximately 58 percent of the senior population, are two to three times more than those for men across all medical treatments. Between age 65 and 74, men's costs for fall-related injuries were 44 percent higher than women's. Between age 75 to 84, costs were nearly the same for men

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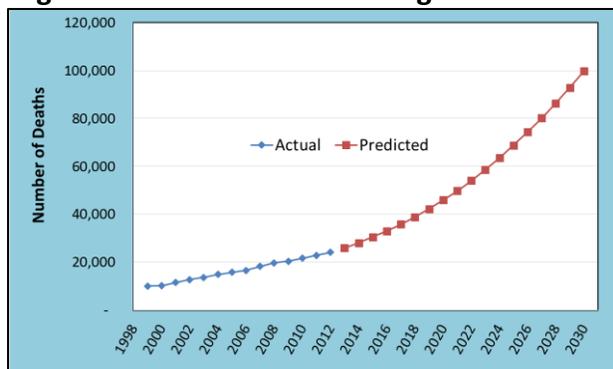
<sup>1</sup> As noted, not all cost studies use the same methodology to ascertain costs related to senior falls. Costs cited here, while comparable to some degree, reflect data sources and literature available to and used by specific authors.

and women, but at age 85 years and older, although men's costs remained the same as during the previous ten years, women's costs skyrocketed by 67 percent (Stevens et al. 2006).

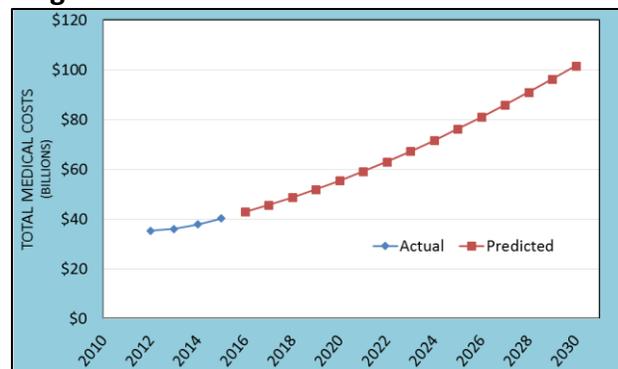
The CDC determines "direct medical costs" as those that include the following fees: hospital and nursing home care, doctor and other professional services, rehabilitation, community-based services, use of medical equipment, prescription drugs, and insurance processing. These costs do not consider or account for expenditures related to long-term injury impacts, such as disability, reliance on others, reduced or lost time from work and household duties, and – perhaps most importantly - reduced quality of life (i.e., the "indirect costs" of a fall) (CDC 2016a; Burns, Stevens, and Lee 2016). This highlights another challenge in determining and assigning costs to senior falls as they rarely account for indirect costs ranging from lost wages by both injured seniors and their caregivers or home modification costs often required to allow the senior to return home (Burns, Stevens, and Lee 2016) (BiPartisanPolicyCenter 2016). No cost studies were found that attempted to quantify costs associated with reduced quality of life or other indirect costs related to falls by senior adults.

As the U.S. population ages, falls are likely to increase. Researchers estimate annual deaths from falls will triple to 100,000 (see Figure 1) as will associated costs, at least up to \$100 billion (see Figure 2) by 2030 (Houry et al. 2016).

**Figure 1. Fatal Falls in Adults Age 65+**



**Figure 2. Medical Costs Due to Fatal Falls**



Source: Houry et al. 2016 / The CDC Injury Centers Response to the Growing Public Health Problem of Falls Among Older Adults

Researchers caution that fall-related deaths and costs will rise unless proactive steps are taken. Many believe that changes in fall prevention within the clinical setting would have a positive impact. It has been calculated that future falls could be reduced by 25 percent if physicians integrated falls risk screening into clinical practice, reviewed and modified medications, and recommended vitamin D supplements (Houry et al. 2016; NCOA 2016).

## 5 ASSESSMENTS and INTERVENTIONS

In 2014, approximately 13 percent of the U.S. population was over 65 years old (Mayo-Wilson et al. 2014). By 2030, it is expected to grow to 20 percent, with a high proportion being individuals age 85 years and older (BiPartisanPolicyCenter 2016). Annually, a third of community-dwelling seniors over the age of 65 are injured from an unintentional fall; 50 percent of seniors of those over age 80 fall annually (Hester and Wei 2013). Across the board, healthcare costs are rising and, as it has been shown, costs related to senior falls are expected to explode as the senior population increases. In fact, the public health community views elderly falls as a growing health epidemic (Shubert 2011; Houry et al. 2016).

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The CDC believes many fall risks, both intrinsic and extrinsic, are modifiable. Healthcare providers are encouraged to work with seniors on risk factors such as muscle weakness, gait and balance problems, medication interactions, and environmental hazards (Kaniewski et al. 2014) (CDC 2016b).

In an attempt to reduce these trends, numerous fall prevention interventions and programs have been created over the past 20 years (Child et al. 2012). Programs target specific risk factors, such as balance, physical fitness, and home hazards, as well as take multifaceted approaches that attempt to address a range of risk factors. A few relatively recent programs include fall prevention as one key element of a larger goal of providing coordinated healthcare and support to seniors. Although some interventions and programs are short-term, lasting only about eight to ten weeks, other innovative programs have completely altered the way healthcare services, including fall prevention programs, are being provided to seniors.

One of the first major evaluations of fall prevention programs, the Cochrane Database of Systematic Reviews, was published in 1997 and included a review of 18 intervention trials. Interventions fell into two categories: exercise programs or multifaceted interventions. The most recent Cochrane Review, released in 2012, covered 219 randomized controlled trials (Gillespie et al. 2012). Both the American Geriatrics Society/British Geriatrics Society (AGS/BGS) and CDC have drawn from reviews such as Cochrane to develop their clinical practice and fall prevention guidelines, including CDC's STEADI (Stop Elderly Deaths, Accidents, and Injuries). STEADI is broadly used by healthcare professionals across the U.S. to guide prevention initiatives in their communities (Stevens and Phelan 2013).

Over the past ten years, substantial progress has been made on fall prevention strategies. A plethora of research on fall prevention has been conducted to determine which interventions and programs provide the greatest benefits (Cameron 2015). This review does not attempt to provide an assessment of specific evidence-based fall prevention interventions and programs, nor the copious studies attempting to measure the effectiveness of various single and multifaceted interventions. Instead, it attempts to provide basic information about current approaches to senior fall reduction, and highlight promising practices and policies for community-dwelling seniors and recommendations presented from the studies.

Fall prevention and management strategies can be broken into two major categories: health promotion, and fall risk assessment and management. Health promotion generally starts *before* a fall ever occurs. It encourages healthy older adults to engage in physical activities that integrate flexibility and balance exercises with strength training, and conduct self-assessments of their homes to help identify and proactively address potential environmental hazards. Health promotion strategies can also be used after an initial fall to help prevent future falls. Fall risk assessment and management can include risk screenings, reviews of medical records and medicines, physical activities adapted to an individual's functional and cognitive capacity, and home assessments and, as necessary, modifications (Bezaitis 2008). Most of the literature covered by this review focuses more on fall risk management than health promotion.

## 5.1 Assessments

Although there are an abundance of senior fall risk predictors, they do not apply equally to all age groups or even genders (Karlsson et al. 2013; Albert et al. 2014; Kronfol 2012). One of the main risk predictors, a previous fall, is often missed because it may not be reported to a doctor or healthcare professional. Seniors may be embarrassed to admit they have fallen, do not consider a "trip" that did not cause a serious injury a "fall," or are afraid that if they admit to falling, they may end up in a nursing home. For these reasons, many researchers believe that seniors' primary care physicians need to be proactive and conduct clinical evaluations with seniors on a routine basis to determine who may be at a greater risk of falling (Persad, Cook, and Giordani 2010). While there are numerous risk assessment tools available, studies indicate that it is important to consider which are the most appropriate for community-dwelling seniors (Hester and Wei 2013).

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Clinical evaluations can be divided into three basic groups: self-reporting, single-task measures, and multiple-task measures. Self-reporting evaluations ask seniors about recent previous falls (i.e., within the past six months to a year). While the easiest assessment, it rarely provides the most accurate information nor can it determine fall risk for seniors without a prior history of falling. In an effort to improve self-reporting assessments, standardized questionnaires, such as the Falls Risk for Older People in the Community scale (FROP-Com), have been created. FROP-Com goes beyond simply asking about a recent fall to address 13 major risk factors. It has proven fairly successful at predicting future falls, in some cases better than single-task performance measures.

Single-task performance measures assess important characteristics of balance and gait. Commonly used tools include one-legged stands, functional reach, five times sit-to-stand (FTSS), or timed up-and-go (TUG). Although they are generally easy to administer and do not take much time, if the wrong tool is used or an impaired area not accurately assessed, key information is often missed. Multiple task performance measures incorporate aspects of both self-report and single-task assessments. Multitask assessment have the potential of providing the most robust evaluation of a senior's fall risk as they recognize that falls rarely have a single cause and thus provide the clinician greater detail. Commonly used multitask measures include the Berg Balance Scale, the Dynamic Gait Index, and the Performance Oriented Mobility Assessment (Persad, Cook, and Giordani 2010).

In addition to clinical assessments and screenings, many fall prevention experts recommend community-dwelling seniors receive home assessments. A comprehensive home assessment is generally conducted by an occupational therapist (OT) or other qualified service provider (healthcare or housing). It determines a range of potential home hazards, educates the senior about the home environment, and evaluates how the senior negotiates their home. In best-case scenarios, the healthcare professional then works with the senior to problem-solve any issues identified during the assessment. This level of home assessment, along with adequate follow up, has been shown to be significantly successful in reducing falls. Seniors at high-risk for falling (i.e., individuals with a history of falls or multiple falls within the past year) have shown a 39 percent reduction in falls, with a 21 percent reduction shown across all levels of risk (Clemson et al. 2008).

However, risk assessments and health screens alone do not reduce falls. Once an assessment has been conducted, it must be followed up with individualized risk management interventions and strategies to be effective (Stevens and Phelan 2013).

## 5.2 Interventions

In 2015, the CDC released the third edition of its Compendium of Effective Fall Interventions. The compendium identifies specific evidence-based interventions that have successfully reduced falls for community-dwelling seniors. The 2015 Compendium included studies of 29 single interventions (15 exercise, four home, and ten clinical), and 12 multifaceted interventions (Stevens and Burns 2015).

### 5.2.1 Single Interventions

Single interventions focus on one fall risk area or presumed cause of a fall, such as lack of balance and muscle weakness, medication interaction, or home environment. High risk seniors (e.g., someone who had already fallen at least once) who received a clinical assessment coupled with individualized recommendation for risk reduction and patient follow-up were able to lower their fall risk by 18 percent (Stevens et al. 2006).

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### 5.2.1.1 Exercise

Balance and strength impairments are the most common physical risk factors for community-dwelling seniors. Such seniors suffering from gait and balance issues or muscle weakness are three to four times more likely to fall than their peers. Fortunately, exercises focused on physical activity, balance, and strength training are considered the most effective single intervention strategy. A 2006 study found that exercise for community-dwelling seniors, as a single intervention, lowered their risk of falling by 12 to 20 percent. The most effective types of exercise interventions are balance and gait training, strength training, and Tai Chi, which have been shown to reduce fall risk by an average of 24 percent. Intensity and duration of an exercise program has a large impact on its benefit. The most effective exercise interventions are structured, progressive (i.e., get more difficult over time), and provide a minimum dose of exercise. Regrettably, many programs are structured for too short a period of time (e.g., ten weeks); programs with the highest benefit provide at least 50 hours of exercise. Multi-component home and group exercise interventions (i.e., those that use more than one exercise strategy) have been found to effectively reduce both the rate and risk of senior falls (Gillespie 2013). Although effective for many individuals, exercise as a single intervention may not be appropriate for frail seniors as it has been shown, in some cases, to result in an increase in fall rates. (Shubert 2011) (Stevens, Noonan, and Rubenstein 2010).

Programs that achieve 50 hours of exercise are often offered either two times a week for six months or three times a week for four months. However, as it may be difficult for seniors to attend classes so frequently or, for that length of time, the longevity and intensity necessary to be effective could be achieved by combining group classes with at-home exercise regimes (Stevens, Noonan, and Rubenstein 2010; Shubert 2011).

Examples of successful community-based exercise interventions include home-based programs, such as Otago and Lifestyle-integrated Functional Exercise (LiFE), as well as group classes, such as Tai Chi and music-based dance, which are offered in numerous community settings, from senior centers to local libraries. Otago is offered to seniors with functional impairments and has shown an ROI of 36 percent for every dollar invested in the program. It has also demonstrated a 40 percent reduction in falls over a one-year period. Otago provides a tailored exercise regime to help improve a senior's strength, balance, stability, and range of motion (Shubert 2011) (Houry et al. 2016).

LiFE is a progressive in-home balance and strength training program that embeds exercise into a senior's daily routine. Healthcare professionals train seniors to use various tasks (e.g., brushing their teeth, loading the dishwasher) as opportunities to improve their strength and balance. It has a higher compliance record than traditional exercise programs because it becomes part of the senior's lifestyle and activities are tailored to the individual seniors. LiFE participants have experienced a 31 percent reduction in falls (Stevens and Burns 2015).

Tai Chi is one of the most commonly offered group exercise programs to help improve seniors' balance and exercise. The duration of the intervention can range from eight to 52 weeks of classes. However, studies of Tai Chi interventions have produced varying conclusions about its effectiveness. While Tai Chi appears to be less effective for frail seniors (Hempel et al. 2014), healthier older adults participating in Tai Chi, when compared to participation in a simple stretching exercise class, have reduced their rate of falls by 55 percent (Stevens and Burns 2015). Unfortunately, several studies noted that Tai Chi programs often have a low adherence rate and high withdrawal, making it difficult for some researchers to recommend Tai Chi as an effective fall prevention intervention (Hanley, Silke, and Murphy 2011).

In addition to balance and strength training, exercise classes, which combine music and dance, offer seniors active social engagement and interaction. Although the effectiveness of these exercise classes varies, participants in classes such as the six-month Jacques-Dalcroze Eurhythmics program were found to reduce their rate of falls by approximate 54 percent (Stevens and Burns 2015).

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### 5.2.1.2 Home Environmental Hazards and Modifications

Home modifications are defined as adapting the home environment to make routine tasks easier, help reduce accidents, and support seniors' ability to live independently in their community. Modifications can include actions such as removing hazards (e.g., clutter and throw rugs); adding assistive features or devices, such as grab bars; moving furnishings to create clearer pathways; altering where some daily activities occur; and making renovations, such as widening doors, installing ramps or other changes to the built structure (Ganz, Alkema, and Wu 2008). Studies have shown that interventions that include a home visit from an occupational therapist (OT) to work with the senior and their caregivers to identify home hazards and provide recommendations for modifications to improve home safety, especially for those at high risk of falling, is effective at reducing fall rates (Gillespie 2013) (Hanley, Silke, and Murphy 2011) as well as healthcare costs (BiPartisanPolicyCenter 2016).

A large number of the homes in communities across the U.S. were constructed before accessibility was a priority for many homeowners (and, hence, many homebuilders). Moreover, although home modifications such as grab bars and stair railings on both sides of the staircase have been found effective for reducing falls, few seniors have these types of amenities (BiPartisanPolicyCenter 2016). In fact, HUD data indicates that more than 50 percent of senior households do not have any type of home safety feature, such as a grab bar in the bathroom, which would lower their fall risk (OIPP 2012).

The American Housing Survey counts which homes among the nation's 114,907 housing units have certain safety features. Table 1 lists the frequency these safety features were found in U.S. homes in 2011. As shown, only 18 percent had grab bars in the bathroom, eight percent had built-in seats in the shower, and less than one percent had ramps (Census 2011).

**Table 1. Accessibility / Safety Features in U.S. Homes**

Accessibility Feature	Percent
Floors with no steps between rooms	63.4
Entry level bathroom	48.1
Entry level bedroom	35.7
Handles or levers on sinks	28.1
Roll-out trays or lazy susans in cabinets	19.0
Hand rails or grab bars in bathroom	17.7
Hand rails or grab bars on steps	15.7
Handles on doors instead of knobs	11.0
Built-in seats in shower	8.4
Extra wide doors or hallways	7.9
Raised toilets	6.7
Hand rails or grab bars in other areas	2.4
Ramps	0.6
Elevators	0.2

Source: Census (2011). American Housing Survey for the United States: 2011. Washington, DC: US Census Bureau. AHS\_2011\_National\_Tables.xls. Data derived from Table S-02-AO.

Regardless of when it was built, nearly every home has some type of hazard, from slippery floors and throw rugs to inadequate lighting or missing stair rails (Lord, Menz, and Sherrington 2006; Daniel et al. 2013). Many seniors, when asked about a fall, will attribute it to a home hazard (Phelan et al. 2015). Consequently, one of the most commonly used fall prevention tactics is to reduce or eliminate such

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hazards. Several fall prevention programs include education about home hazards to encourage seniors and their caregivers to take proactive actions before a fall occurs (Houry et al. 2016).

Although costs may vary significantly between communities, home modification interventions tend to be popular in addressing fall risks for community-based seniors. They are easily understood by most people and very often they allow people to "age in place" (i.e., live in the community or environment of their choosing). Also, returns on home modification investments begin within the first year after completion and tend to grow exponentially. Most modifications can be completed quickly, often in a week or less, generally have strong community acceptance, and, more often than not, require relatively low capital investment (Ling et al. 2008).

The non-quantifiable returns on investment (ROI) with home modifications also tend to be high. Seniors often feel as though they have more independence (i.e., they are allowed to "age in place") and frequently feel like they are less of a burden to family and friends. Being able to remain in their home can help build self-confidence, which in turn lends itself to more activity. Additionally, many seniors show a reduced fear of falling once their home has been adapted with features that allow them to better navigate it (Ling et al. 2008).

A major drawback with home modifications is determining who will cover the cost of renovations since many moderate- and low-income seniors rarely have adequate funds (BiPartisanPolicyCenter 2016). The 2011 Community Living Assistance Services and Support Act (CLASS Act) would have helped seniors pay for home renovations that would allow them to remain in their homes, but it unfortunately was deemed unworkable and repealed in 2013 (Bezaitis 2008) (Colello 2013) .

There are numerous federal (and state) agencies that support and provide resources for home assessments and modifications, including HUD, the U.S. Department of Veterans Affairs (VA), the U.S. Department of Health and Human Services (HHS), USDA and DOE. However, funding between these agencies is rarely coordinated, and finding and accessing available resources can be overwhelming for many senior homeowners and their caregivers. Moreover, many of the programs designed to fund home modifications, such those under the Older American Act (OAA), have had their funding cut or held flat for the past several years (BiPartisanPolicyCenter 2016).

One study found the costs related to home modifications were minimal when compared to the costs of treating senior fall-related injuries, and definitely less expensive than costs related to permanent disability and the intangible costs associated with loss of independence. Researchers determined that every dollar spent on home safety modifications resulted in a \$3 savings in direct medical care costs related to senior falls. This study also examined a few costs incurred when building a new home versus retrofitting an existing home for a senior. They found that a zero-step entry (often standard in universal design practices) when building a new home costs approximately \$150 whereas adding a ramp to an existing home costs on average from \$2,800 to \$5,000. However, while individual homeowners may bear retrofit costs in some instances, more often they are borne by taxpayers via Medicaid and/or Medicare coverage (OIPP 2012). Another study found significant evidence that home modifications targeted to relatively common fall hazards were beneficial. These benefits were calculated to be eight times the modification costs when disability for adjusted life years (DALY) and value of statistical life (VOSL) costs<sup>2</sup> were included in the assessment (Keall et al. 2015).

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<sup>2</sup> DALY costs represent the sum years of life lost versus years lived with disability within disease or injury. Generally speaking, it represents the amount people are willing to pay to avoid death and suffering. VOSL costs represent the total amount of money that people surveyed said they would be willing to pay for safety improvements that prevent premature deaths.

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Numerous organizations, including the CDC, National Council on Aging, and the American Occupational Therapy Association (AOTA), have developed and posted home safety checklists on their websites. Most often, the checklists are designed for senior homeowners or their caregivers to self-assess the safety of the home. The checklists also are often accompanied with guidance as to how to remedy environmental hazards identified during the home self-inspection.

However, researchers have mixed opinions about the benefits of addressing home hazards through modification interventions. Several researchers noted that falls in the home are complex interactions between a senior's physical ability, environmental stressors, and their own level of risk. Although a senior may cite a specific home hazard as the cause of a fall, it is often not the hazard alone that actually led to the fall. The physical and cognitive capacity of the senior, in relationship to the hazard, can significantly contribute to the risk and rate of falls (Lord, Menz, and Sherrington 2006) (Daniel et al. 2013).

The 2012 Cochrane review of common single interventions, such as group and home-based exercise programs and home safety, found that they reduced both the rate of falling as well as the risk of falling. Group exercise featuring Tai Chi was cited as being particularly effective as were home safety interventions. Such interventions conducted by occupational therapists and targeted to seniors with a high risk of falling appeared to be the most successful (Gillespie 2013).

#### 5.2.1.3 Clinical Interventions

Clinical interventions target specific nutritional, medical or biological impairments that contribute to senior falls. Numerous studies have examined clinical fall prevention interventions, such as Vitamin D supplements, multiple-medicines and potential medicine interactions, and disbursement of education materials. Except for women and in instances where a senior had a low-level of Vitamin D in their blood prior to the intervention, studies did not find Vitamin D supplements as a means of reducing falls in community-dwelling seniors to be very effective (Gillespie 2013). Women, however, did appear to react favorably to Vitamin D interventions, with studies showing ranges from 38 to 54 percent reduction in falls (Stevens and Burns 2015).

Studies examining the efficacy of medicine review interventions in reducing senior falls found little evidence that they were beneficial although gradual withdrawal of some types of drugs, including psychotropic medications, was shown to reduce falls (Stevens and Burns 2015; Gillespie 2013). Although numerous researchers recommend increasing the breadth and reach of educational materials to build senior and overall community knowledge about senior falls and how to avoid them, the evidence related to single interventions focusing on education were inconclusive (Gillespie et al. 2012).

#### 5.2.2 Multifactorial Interventions

Because many practitioners believe that interventions should attempt to address as many fall risks as possible (Karlsson et al. 2013), multifactorial interventions attempt to tackle several fall risk factors together. Multifactorial interventions generally start with an assessment of seniors to determine their fall risk factors, identify which have the potential for modification, and establish an intervention action plan. A multifactorial intervention might feature collaboration between several health disciplines, such as a primary care physician, physical and/or occupational therapists, pharmacists, nurses, social or community health workers, and housing renovation professionals (Ganz, Alkema, and Wu 2008). Because multifactorial interventions often involve multiple health and social service providers, all of whom have their own language, bureaucracies, financing and allowable reimbursements, implementing community-based multifactorial interventions and programs can be difficult. A key factor to successful multifactorial interventions is follow up to ensure that information is being shared as necessary between the various providers (Ganz, Alkema, and Wu 2008) (Clemson et al. 2008).

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Although community-dwelling seniors have a lower risk of falls than those living in long-term care facilities (Cusimano, Kwok, and Spadafora 2008), successfully implementing appropriate multifaceted care requires not only a higher degree of coordination between healthcare and social service providers, but also with seniors and their caregivers (Ganz, Alkema, and Wu 2008) (Hester and Wei 2013). Occupational therapists (OT) can play a significant role in successful multifaceted interventions. While home risk assessments and modification recommendations have traditionally been the bailiwick of OTs, studies show that, as part of a multidisciplinary team, OTs can also provide assistance in areas ranging from medication and postural hypotension management to facilitating behavioral change to help seniors improve their self-confidence in performing daily tasks, making their role invaluable to multifactorial interventions (Leland et al. 2012).

Additionally, although some early studies found no conclusive results on the effectiveness of fall prevention interventions, such as home assessments and modifications, more recent studies have found that these interventions are very effective when part of a multifactorial program. In fact, multifactorial or multifaceted interventions have shown greater success than single-strategy interventions for community-dwelling seniors (Cusimano, Kwok, and Spadafora 2008) (Ganz, Alkema, and Wu 2008). Studies found strong overall support for multifactorial programs that include home hazard evaluations and modifications, in tandem with physical activity or exercise classes, fall prevention risk education, vision and medication checks, and, as necessary, assistive devices (Chase et al. 2012).

Multifaceted interventions for community-based seniors that include follow up by health professionals who provided individualized exercise and strength training, combined with home safety modifications to help reduce falls, have been found to be cost effective. One study found that \$800, on average, spent on individualized treatment and home modifications averted \$1,728 in medical costs associated with a senior fall. Home modifications covered by the study included (as necessary): installation of access ramps, minor floor repairs, and installation of grab bar. In determining overall costs, this study included medical costs associated with a fall as well as costs associated with a temporary move to a nursing home as a result of fall injuries. Although no formal medical criteria were used to evaluate seniors participating in the program, the intervention did target seniors that had previously fallen and were considered "high" risk (Ling et al. 2008). These studies showed a higher ROI with home modification than earlier studies (e.g., an oft-cited 1990 study by Tinetti), which may be attributed to higher healthcare costs and lower material and labor costs related to home modification and repair programs (Ling et al. 2008).

The 2012 Cochrane review evaluated several multifactorial interventions and found that, although they were successful at reducing the *rate* of falling, they did not reduce the *risk* of falling. However, the review recognized the complexity of multifactorial interventions and stated that their effectiveness may relate to factors that are not yet determined (Gillespie et al. 2012).

For community-dwelling seniors with a history of falls, integrated risk management interventions that include home modifications can reduce their falls, help ease their fear of falling, and facilitate their day-to-day living. However, changes to make their home safer can also be challenging and emotional for seniors. Home modifications often require behavioral adjustments as well as the willingness to commit to renovating their home and using its new features (Ganz, Alkema, and Wu 2008).

Moreover, not all seniors benefit from multifactorial fall prevention interventions. Research indicates the success of multifactorial programs requires the right combination of content, process, and audience. Several researchers noted that community-based fall prevention programs should not take a one-size fits all approach; not every component of a multifactorial intervention may be effective, nor are all interventions effective for every population. To be effective, interventions, regardless of whether they are single or multifactorial, must be designed to meet the needs of the individual senior. This means that each aspect of a program must be targeted to the right age group, designed to achieve established goals or

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suggested protocols (e.g., appropriate duration and intensity of an exercise component), and properly marketed to its selected target group (Mahoney 2010) (Mayo-Wilson et al. 2014) (Hanley, Silke, and Murphy 2011) (Shubert 2011).

Programs such as *Stepping On*, which integrate exercise with education on home and environmental safety and medication management, and offer vision screening, have been found to offer an ROI of 64 percent for every dollar spent (Houry et al. 2016). The CDC's 2015 Compendium highlights studies that examine the effectiveness of multifaceted programs that used team-based interventions included components such as education, group and home-based balance and strength training classes, review of medications, home hazard assessment and modification, and biological screening tools. One year-long program reported a 55 percent lower fall rate for program participants. Other programs, over varying time periods, experienced similar results (Stevens and Burns 2015)

Recent research shows that these types of multifaceted interventions and programs are the most effective strategy to senior fall prevention because they utilize a variety of approaches to address the multiple fall-related factors. On average, multifaceted interventions have been shown to reduce fall risks by approximately 28 percent (Stevens, Noonan, and Rubenstein 2010). However, as several studies have pointed out, it is essential to ensure the content of the intervention matches the target group (i.e., individuals) it is serving (Mahoney 2010) (Hanley, Silke, and Murphy 2011).

## 6 Innovative Practices with Policy Implications

### 6.1 Photography-Based Home Assessments (PhoHA)

Photography-Based Home Assessments (PhoHA) were developed as a potential alternative to an onsite home assessment (OsHA) provided by an OT. While not the ideal method of conducting an assessment, a PhoHA offers a good low-cost alternative when lack of staff and/or resources would otherwise mean an assessment would not occur. With a PhoHA assessment, the OT directs the senior's family or trusted friend on how to take photographs of crucial elements in the senior's home to identify environmental hazards. The OT then reviews and analyzes the photographs to identify hazards and provide feedback on how they can be addressed. To date, the program has seen a measure of success: PhoHAs have been able to identify slightly more than 79 percent of the environmental fall risk factors covered by an OsHA and are approximately 53 percent less expensive. It also receives high ratings from program participants. Areas that an OsHA does not capture well are assessment of slippery surfaces, pathways, and lighting (Daniel et al. 2013).

### 6.2 Fall Prevention and the Impact of Technology

Technology has come a long way from "I've fallen, and I can't get up!," the trademarked catchphrase associated with personal emergency response systems (PERS) produced by Life Alert Emergency Response, Inc., which detect falls and relay alarm messages to caregivers or emergency responders. There are numerous PERS currently available. However, their effectiveness is limited as they often require the senior to take some type of action to issue an alarm. One study found that 80 percent of seniors wearing a PERS at the time of a fall did not use it to call for assistance (Chaudhuri, Thompson, and Demiris 2014).

In addition to sensors, such as pendants and wristbands, passive monitoring alternatives, such as body-worn units with integrated sensors and numerous other devices including cameras, microphones or pressure sensitive floor sensors designed to help monitor and protect community-dwelling seniors, have emerged in recent years (Patel et al. 2012) (Chaudhuri, Thompson, and Demiris 2014).

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Use of PERS are significant because the severity of a senior fall is often influenced by the amount of time that elapses between the incident and when the senior receives help and medical attention. Seniors living alone are often unable to call for help when a fall occurs and, even if a senior is not injured, 47 percent have reported being unable to get up on their own after a fall. Seniors that remain on the ground for more than an hour after a fall, defined as a "long-lie" event, often suffer more serious injuries, a higher rate of mortality, and often end up in long-term nursing facilities. Fifty percent of seniors that experience a "long-lie" die within six months of the incident (Thilo et al. 2016) (Chaudhuri, Thompson, and Demiris 2014). The potential negative impacts of a "long-lie" are especially prevalent in rural areas, as it is often necessary to travel up to three times farther than in urban areas to receive medical care (Patel et al. 2012).

Today's wearable sensors not only have the ability to monitor an individual, but, in some cases, to also diagnose. Many have motion sensors that alert caregivers in the event a senior falls (or does not move for a long period of time), as well as physiological and biochemical sensing capabilities. Applications also have the capacity to gather and transmit information to remote sites, such as hospitals, for clinical analysis. In-home monitoring systems often rely on a home computer to relay information, but the proliferation of mobile phones has expanded the ability to monitor seniors when they are outside their home environment. Many products also have global positioning system (GPS) software that can pinpoint where a senior is, in the home or elsewhere, in the event of a fall (Patel et al. 2012).

More recently, sensors have been integrated with other systems, including ambient systems and health data streams, which allow for remote monitoring of a senior's overall health and well-being. Systems have the capacity to collect and analyze data that tracks motion and vital signs, individual medical conditions, activities of daily living (ADLs), and emergency situations (Patel et al. 2012).

One group is developing a platform known as *SENSOBOT*, which provides home monitoring of seniors through the combination of sensors with a robotic platform that can promptly respond to falls (Della Toffola et al. 2011). There are also non-wearable systems, including cameras, motion sensors, microphones and floor sensors, which can be imbedded in the home. These help alert caregivers about seniors' movements throughout the home and can readily identify when there are abnormal events. While many seniors have expressed interested in these types of devices, there are some concerns about privacy issues (Chaudhuri, Thompson, and Demiris 2014)

Beyond detecting the occurrence of a fall, many new technologies are being used to predict falls as well as facilitate assessment and exercise, and guide home rehabilitation interventions. For example, *Evidence in Motion*, a commercial fall prevention application based on the CDC's STEADI tool and released in 2012, helps standardize and simplify fall risk screenings and management in clinical settings. The application provides clinicians screening questions and tools based on the STEADI guidelines. Based on the risk assessment and available interventions and education, the tool provides the clinician and senior (and/or caregiver) with available resources for fall prevention (Evidence\_in\_Motion 2016).

Smartphone platforms are also being used as pre-fall prevention intervention systems (Pre-PFIs). In some cases, they monitor and help seniors adhere to in-home exercise or medicine regimes. In others, they may be used to monitor gait patterns in real-time to predict and alert users of an imminent fall. Three-dimensional (3D) technology such as the Wii Balance Board are being used to monitor and assess seniors' strength and balance post-falls. Based on assessment results, 3D games, using Wii Fit consoles, challenging senior's gait and reach, are commonly used to help them increase their strength and balance (Hamm et al. 2016).

Technological advances may offer some capacity to reduce healthcare costs while improving the provision and quality of care. However, encouraging seniors to adopt new technologies and ensuring they have the Internet access and acumen necessary to use the tools is still a major hurdle (Hamm et al. 2016).

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### 6.3 Aging in Place

“Aging in place” is a term used to describe the concept of individuals remaining in their home and community as they age. Although not a new concept, aging in place has gained significant prominence over the past ten years as the population over the age of 65 has grown. While the term is broadly used by service providers, researchers and policymakers, some studies have found few seniors are familiar with it (Wiles et al. 2012) (Vasunilashorn et al. 2012).

Many seniors express a strong desire to remain in their homes and communities as a means of maintaining their autonomy and independence. The rising costs of institutional care (e.g., assisted living facilities, nursing homes) is also a factor for many people, including seniors, policymakers, and health providers, who see the ability for a senior to remain in their home and community as a way of avoiding the high costs associated with long-term care (Vasunilashorn et al. 2012) (Wiles et al. 2012).

However, the ability to safely age in place often means that many seniors' homes will require some level of design modifications to address the reduced physical and functional capabilities of the senior resident. Concerns have also been raised about the affordability, quality, and age of the housing stock in which seniors currently reside, from its structural features to its insulation and heating/cooling capacity. Low income seniors rarely have the means to make these modifications (Wiles et al. 2012) (BiPartisanPolicyCenter 2016).

Additionally, while a fair amount of literature on aging in place tends to focus on housing options and home adaptations, attention has recently expanded to include the significance that community services and supports play in the ability of seniors to age in place. Necessary services and supports include access to affordable transportation options, recreational amenities that promote physical activity, and opportunities for social and cultural engagement. Community services also include supportive services ranging from help with home modifications and fall prevention classes to meals-on-wheels and access to healthcare. In fact, some researchers have expressed concern that if demand for community and supportive services are not met and maintained, the overarching goal of aging in place could be jeopardized (Vasunilashorn et al. 2012).

#### ***Community Aging in Place, Advancing Better Living for Elders (CAPABLE)***

Several models of care have been developed over the past several years, which offer the types of supportive services that seniors often need to remain in their communities and homes. CAPABLE (Community Aging in Place, Advancing Better Living for Elders) is one such program. CAPABLE was launched in 2009 by the Johns Hopkins School of Nursing to help functionally impaired low-income seniors in the City of Baltimore, Maryland and its surrounding counties to address their health issues while living in a safe home environment. An interdisciplinary CAPABLE team, comprised of a registered nurse (RN), occupational therapist (OT), and a housing repair specialist (handyman), work with seniors to address the physical and medical aspects of the senior and the functionality of their home environment (Szanton et al. 2014).

CAPABLE builds on the successful Advancing Better Living for Elders (ABLE) program employed in the City of Philadelphia, Pennsylvania by explicitly targeting home and health issues. Clients are assessed by an RN and an OT who work with the senior, a handyman, and a pharmacist to create a plan of care that has been specifically tailored to the senior and his/her home. Depending on the senior's goals, the RN and the OT may help the senior work on strength and balance issues while the handyman might install a ramp or handrail, or provide devices that helps the senior to dress or rise from a chair. Although guided by input and feedback from the healthcare and housing professionals, program goals are set by the seniors themselves (i.e., the intervention is patient-directed, not just patient-centric). Making the program patient-directed helps ensure active buy-in and adherence from the seniors (Szanton et al. 2014).

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The program enables seniors to address health issues ranging from pain management and depression to medication review, and helps seniors effectively communicate and work with their primary care physician to tackle their health concerns. CAPABLE also goes beyond simply addressing clutter and trip hazards or adding grab bars and installing raised toilet sets, to add ramps and make other small housing repairs and renovations that can help ease a senior's functional limitations (Szanton et al. 2014).

The CAPABLE team meets with the senior for 60 to 90 minutes up to ten times over a five-month period to assess and address their health, fall risks, and home hazards. The goal is to help the senior identify their own functional goals, how best to address their health issues and falls risks in the home, and provide durable lessons about the effective ways to approach their daily activities.

Most medical and nursing professionals focus on managing illnesses and disease rather than the functional abilities of a senior in their home, but function is key to their independence. CAPABLE represents a sustainable model of care that addresses the functionality of both the senior and their home environment. The program uses health care dollars to invest in housing and health, which in turn saves health care costs. Total costs for CAPABLE run approximately \$3,300 per participant, including \$1,200 in home repairs. The average cost for two weeks in a nursing home is approximately \$3,500, which is about a fifth the cost of an average hospitalization for the same period (Szanton et al. 2015).

During its initial pilot stage, CAPABLE saw significant positive outcomes from participating seniors; they reported having less difficulty with normal daily activities, less pain, and reduced falls. In some cases, seniors experienced reductions in depression symptoms that could be equated to anti-depression medications.

CAPABLE is now in the second year of a three-year federally funded trial. The project's \$4 million grant is expected to generate savings of nearly \$6 million in reduced hospital stays and nursing home admissions. If this prediction hold true, CAPABLE may be scaled up to a national level and offered to all Medicaid recipients under a provision in the Affordable Care Act (ACA) which calls for pilot programs that save Medicaid costs be adopted as federal policy (Szanton et al. 2014).

### ***Support and Services at Home (SASH)***

Another model of care to help individuals age in place are population health management and service-enriched housing programs such as Support and Services at Home (SASH), which was designed to improve the health of residents living in affordable housing developments while decreasing their healthcare expenditure. The program provides a comprehensive, holistic approach to services needed by seniors to manage their healthcare and allow them to remain in their home as they age. Unlike many senior care models and programs, which tend to be time and income limited, SASH is an ongoing continual care model (ASTHO 2014).

SASH employs a population health management (PHM) approach to meet their seniors' needs, helping them access health care and improving their overall health by coordinating various services and supports essential to help senior and disable residents remain in their own home. SASH "panels" are comprised of a full-time care coordinator and part-time wellness nurse who serve approximately 100 senior and disabled participants. SASH care coordinators and wellness nurses work in collaboration with community partners, such as area agencies on aging, visiting nurse associations, and mental health agencies, to coordinate the care of SASH program participants (Kandilov et al. 2016) (Berardo).

SASH was launched in 2008 by Cathedral Square Corporation (CSC), a nonprofit affordable housing provider based in Vermont, to serve seniors and disabled residents living in their communities. CSC created SASH in response to the difficulties its senior residents were having navigating the healthcare

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system and the lack of structural supports for seniors who wanted to remain in their homes. SASH streamlines access to senior services, both medical and non-medical, to help seniors age in place. In 2011, SASH was integrated into a Health and Human Services (HHS) Multi-payer Advanced Primary Care Practice (MAPCP) demonstration and expanded into other affordable housing sites and communities across the state. As of 2015, SASH was serving 4,485 participants with an average age of 72 years old (CSC 2015).

SASH provides targeted support and in-home services by connecting seniors with community-based support services and promoting coordination of healthcare between diverse teams of service, including healthcare and housing providers. Although initially developed specifically for residents of affordable housing, with its participation in the MAPCP demonstration, SASH expanded participant eligibility. SASH participants live in single family homes, mobile homes, and congregate housing throughout the community (ASTHO 2014) (Kandilov et al. 2016).

SASH services include a comprehensive health and wellness assessment, which includes a complete functional, nutritional, and falls assessment, cognitive screen, and depression scale. Based on the assessment that participants receive individualized care plans. Community health workers and wellness nurses provide onsite, one-on-one nurse coaching to address self-management of chronic health conditions. Building relationships with participants allows SASH to better coordinate participants' healthcare, and identify optimal health and wellness group programs and classes. SASH partners with local service providers to offer additional community activities, health and wellness workshops, and direct healthcare services (ASTHO 2014) (CSC 2015).

As they work with participants, SASH coordinators and wellness nurses emphasize prevention, nutrition, and healthy living. In addition to its other services, SASH provides weekly blood pressure clinics and foot clinics to help identify health problems before they cause costly adverse health events (CSC 2014) (Kandilov et al. 2016).

SASH's range of healthcare support and services allows them to meet the needs of healthy as well as very frail participants. Working with participants at varying levels of health also enables them to provide the appropriate level of care when and if circumstances unexpectedly change (Kandilov et al. 2016).

As appropriate and requested, SASH coordinators and wellness nurses also work with healthcare providers to ensure successful hospital discharges, transitions between the hospital, rehabilitation center and a senior's home, and provide overall coordination and continuity of care for SASH participants (Kandilov et al. 2016).

The percent of falls among SASH participants has declined since the program's inception despite the fact that its participants are getting older. Additionally, although the number of seniors participating in the program has grown exponentially, SASH has been able to reduce the growth rate of Medicare expenditures in the state as well as expenditures for visits to hospital emergency and outpatient departments, and primary care/specialist physicians (CSC 2015) (Kandilov et al. 2016).

Maintaining independence as seniors age is important not only to them, but also to the families. It allows them to remain in their communities, often close to family and friends, and is often much more cost effective than moving to long-term nursing care. Especially for low-income seniors, aging in place presents significant socioeconomic challenges. Studies show that they have more co-morbidities, a higher number of functional limitations, and fewer resources to modify their homes to address their limited functional abilities (Szanton et al. 2014). Coordinated interventions such as CAPABLE and SASH can help seniors remain in their homes and communities while, at the same time, lowering healthcare costs for both the senior and overall society.

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## 7 Policy Initiatives and Efforts

One promising policy initiative at the federal level is the *Congregate Housing Service Program (CHSP)*, which provides service enriched housing to low- and moderate-income seniors residing in Section 202 and public housing. Services offered through CHSP include meals, transportation, housekeeping, shopping, and healthcare service coordination. Participants contribute to the cost based on a sliding scale and state subsidies are often available for residents who require financial assistance. Evaluations of the program thus far show that it has enabled many seniors to remain in their homes (Castle and Resnick 2016).

Another innovative federal initiative, which could have potential positive implications for seniors interested in aging in the place is the *Independence at Home Demonstration* offered by the Centers for Medicare and Medicaid Services (CMS). Through the *Independence at Home* program, chronically ill or functionally limited patients are able to receive coordinated primary care services in their home. Although it is not designed as a "senior falls prevention" program or intervention, this type of home-based care, tailored to the senior, can improve the delivery and coordination of health care services to seniors and lower Medicare costs. The demonstration, launched in 2012, was initially only authorized for three years, but has subsequently been extended through September 2017. Analysis of the Independence at Home practices show participants saved more than \$25 million in the first year (an average of approximately \$3,000 per beneficiary) and an additional \$10 million in the second year (averaging approximately \$1,000 per beneficiary). CMS provides incentive payments to health care practices to participate in the program, which is offered by 15 providers in 14 states (CMS 2016a) (CMS 2016b) (Stramowski 2016). Bipartisan legislation was proposed in July 2016 to make the program permanent, but it did not move beyond the Senate ("Independence at Home" 2016).

### 7.1 National Council on Aging

In 2005, the National Council on Aging (NCOA) launched the National Falls Free® Initiative to guide advocacy, awareness, and education efforts at the state, local, and federal level. Falls Free® is designed to promote awareness and build support for evidence-based programs that help prevent senior falls. The initiative currently includes approximately 70 members from national organizations, professional associations, federal agencies, and state fall prevention coalitions. NCOA created the Falls Free® Logic Model which outlines short-, medium- and long-term strategies that organizations can use to promote policy actions and system change in eight specific areas: increasing fall prevention programs; increasing awareness around senior falls and fall prevention; building and leveraging partnerships; increasing provider participation; enhancing data collection; improving fall prevention activities in community-settings; establishing evaluation protocols; and funding (Schneider et al. 2016).

### 7.2 State Fall Prevention Coalitions

State Fall Prevention Coalitions (SFPCs) currently exist in 34 states. Since 2006, NCOA has hosted quarterly calls among the coalitions to share information and support their work. In an effort to assist the Coalitions in their pursuit of system change around fall prevention policies and at the request of the coalitions, NCOA created the *State Policy Toolkit for Advancing Falls Prevention* (toolkit). The Falls Free® Logic Model is embedded in the toolkit to provide state coalitions with a framework for pursuing policy changes (Schneider et al. 2016).

In 2012, a multidisciplinary team of representatives from the coalitions, including public health, social work, business administration, and physical therapists professionals representing academia, government and for-profit organizations, created a survey to document the characteristics of fall prevention coalitions;

identify current policy activities, priorities and goals of the various coalitions; and determine what types of facilitators and barriers the coalitions were encountering in adopting and implementing fall prevention policies and programs (Schneider et al. 2016). Notably missing from the consortium that developed the survey were representatives from housing providers and non-profits. This may be because State Fall Prevention Coalitions appear to lack representation from these sectors.

Based on survey responses and the eight policy goals identified by NCOA, state coalitions identify being actively engaged in the following policy areas:

<b>Policy Activity</b>	<b>% Engaged</b>
Increase availability and accessibility of community fall prevention programs and services	88%
Increase issue awareness and of the effective prevention strategies among stakeholders	71%
Build and leverage an integrated, sustainable fall prevention network	62%
Increase provider participation in fall prevention practices	56%
Enhance data surveillance collection, analysis, and data systems linkages	50%
Improve fall prevention activities in places where older adults reside	47%
Institute ongoing evaluation of state efforts and outcomes	47%
Increase funding opportunities and investments for fall prevention	35%

In addition to the NCOA policies in which the state coalitions are actively engaged, several coalitions are also pursuing policies, such as task forces to educate providers on Medicare billing and reimbursement, for fall prevention services; improving regulations and rules around Trauma Center designations; and pushing insurance companies to offer incentives for healthcare providers offering fall prevention screenings. Other promising policies being pursued include ones that assess home safety by first responders and others that supports tax credits for home modifications. Some state fall prevention coalitions are also considering working with their local zoning departments to streamline the permitting process for home improvements that reduce falls (Schneider et al. 2016).

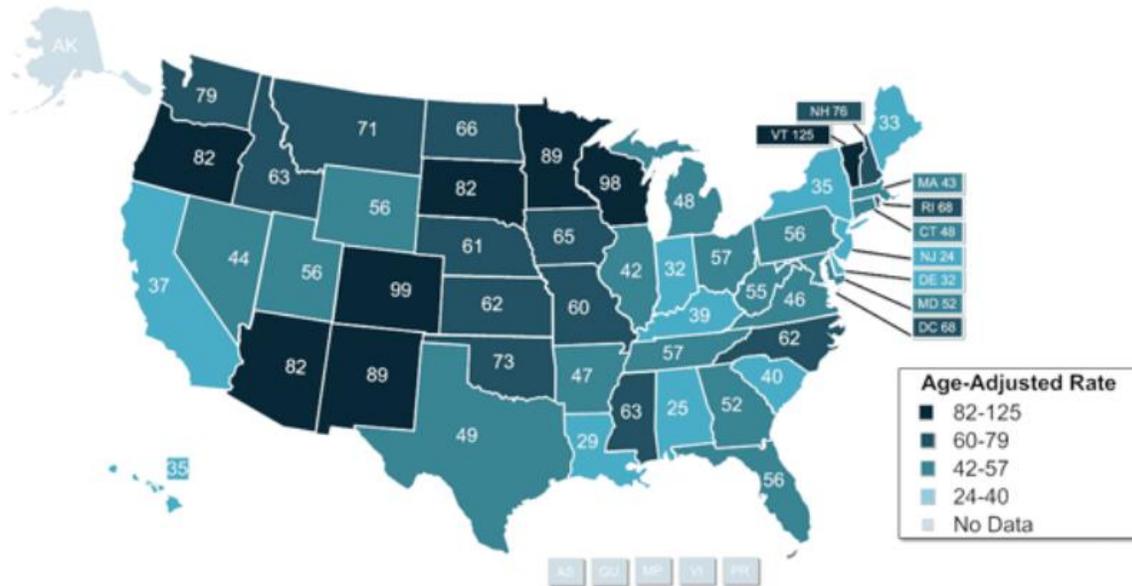
The survey also asked State Coalitions to identify some of the prominent facilitators of their policy efforts. Respondents cited having active support from key Coalition leaders; the actions and networks of internal champions to move efforts forward; their strong partnerships; and the support they receive from other organizations. When asked about the biggest barriers that the Coalitions encountered, the number one cited was the lack of funding to support fall prevention programs. Other major barriers included the lack of capacity and active engagement from Coalition members (Schneider et al. 2016).

Additional charts, based on the referenced survey, which outline the sectors and disciplines currently represented in the coalitions, as well as their policy activities and the barriers and facilitators they have encountered, can be found in the Appendix.

### 7.3 Other State and Local Policy and Program Efforts

State and local governments are often at the forefront of promoting aging-in-place and age-friendly communities. Figure 3 below shows the fall rates among seniors aged 65 and above across the U.S. Some states are much more proactive in senior fall prevention efforts than others, which may reflect the magnitude of the problem in those states (NCSL, 2016).

**Figure 3. Fall Rates for Seniors Aged 65+ per 100,000 by State**



Source: NCSL (01/04/2016). Elderly Falls Prevention Legislation and Statutes. Washington, DC: National Conference of State Legislatures. Available Online: [www.ncsl.org/research/health/elderly-falls-prevention-legislation-and-statutes.aspx](http://www.ncsl.org/research/health/elderly-falls-prevention-legislation-and-statutes.aspx)

The Connecticut Collaboration for Fall Prevention (CCFP) is attempting to move fall prevention strategies into clinical practice and state policy. CCFP recruited clinical sites to participate in an intervention, provided them with the necessary materials, kept interested parties current with a monthly newsletter, and successfully reduced the use of fall-related healthcare services. CCFP plugged the success of the intervention to state legislators, which resulted in a key legislator sponsoring a bill to make fall-prevention efforts state-wide policy. Since then, there have been 322 training sessions throughout the state that have trained 1,525 clinicians on fall prevention. To further help support the efforts, mini-grants were made available to community organizations that incorporated senior fall prevention strategies into their ongoing community activities (Murphy, 2013).

Pennsylvania’s Healthy Steps for Older Adults (HSOA) program is designed to reduce falls among community-dwelling seniors. It provides screening for fall risks and a two-hour fall prevention class that helps seniors recognize home hazards along with a demonstration of exercises designed to improve balance and mobility. Although the intervention does not provide ongoing exercise classes, participants receive information about fall prevention and a booklet that further demonstrates balance and strength exercises. Seniors screened and identified as high-risk for falling are referred to their primary care providers and provided with additional home-safety resources. Follow-up data are collected from participants on a monthly basis. As a result of the program, 83 percent of the participants have reported an increase in confidence about their ability to avoid falls and 25.5 percent have reported an increase in their physical activity. A study of the HSOA program reported it achieved a 17 percent reduction in falls among community-dwelling seniors (Albert, 2014).

Several states and localities, including Virginia, Georgia, Pennsylvania, and Cuyahoga County, Ohio, have also enacted changes to their tax codes or created deferred loan products to incentivize accessibility features into home renovations. Virginia also provides a \$5,000 tax credit for the purchase and/or construction of a new accessible residence and up to 50 percent for home modification (OIPP, 2014).

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A full list of fall prevention legislation passed in each state, which was developed by the National Conference of State Legislatures, is included in the Appendix.

### 7.3.1 Municipalities

Some localities have reduced modification costs and schedules by streamlining their building permit processes. Localities include Cuyahoga County, Ohio (waived permit fees for modifications funded by the Ohio Department of Development if the contractor was licensed and bonded through the county, passed a background check, and did not conduct any electrical work); Southampton, New York (waived permits and reduced fees for elderly or disabled residents to promote accessibility); and Freehold, New Jersey (waived permit fees for constructing accessibility features in 1999) (OIPP, 2014).

## 8 Recommendations for Senior Fall Prevention Policies and Programs

In most cases, the recommendations provided below reflect specific suggestions offered within the cited literature. In other instances, recommendations have been inferred based on information provided in the associated studies (e.g., a cost comparison made between what an accessibility feature would cost if it was automatically included in new housing development versus its costs as a home modification). Additionally, while some of the proposals outlined in recent reports by the BiPartisan Policy Center and the NCOA that focus on policies to support seniors aging-in-place and senior fall prevention have been incorporated into the following recommendations, these organizations have also developed extensive policy and program suggestions which go beyond the scope of this task order. We recommend reviewing and considering these additional suggestions as well (BiPartisanPolicyCenter 2016) (NCOA 2015).

### 8.1 Assessments

In line with AGS/BGS recommendations that physicians ask seniors about falls at least once per year, several studies recommend incorporating fall risk assessments into routine clinical examinations, especially since they are reimbursable under the "Welcome to Medicare" wellness exam (USPSTF 2012) (WHO 2008) (NCOA 2015) (Avin et al. 2015). Seniors reporting a recent fall or that have a fall risk should then be evaluated with a clinical screening test (Avin et al. 2015).

A full clinical evaluation reviews fall history, medications, chronic medical problems, vision, gait and balance, and cardiovascular, and/or neurological functionality (Avin et al. 2015). The AGS/BGS screening recommendations have been on record for more than 15 years (Avin et al. 2015), but the degree to which physical therapists and other health professionals have embraced them is unclear (Shubert 2011) (Persad, Cook, and Giordani 2010). Most studies indicate that fall screenings for seniors are not broadly incorporated into most clinical practice (Stevens, Noonan, and Rubenstein 2010) (Stevens and Phelan 2013) (USPSTF 2012).

Several studies further recommend that the role of physical therapists in fall prevention be expanded to help implement fall screenings. Researchers suggest that physical therapists have the training and expertise to determine which assessment tools should be used as well as how to properly administer the screening and evaluate appropriate interventions (Avin et al. 2015).

### 8.2 Interventions

An important take away from the studies reviewed is that it is essential to understand the relationship between an individual's functional capabilities and the recommended fall risk intervention(s). Nearly every study reviewed recommends tailoring fall prevention interventions to the individual (Child et al. 2012) (USPSTF 2012) (Stevens, Noonan, and Rubenstein 2010). For example, there are some exercise interventions that, while effective in reducing falls for many seniors, might result in falls for a frail senior

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(Sherrington et al. 2011). Some home modifications for relatively active seniors might be more appropriate than those for frail seniors (Lord, Menz, and Sherrington 2006).

### 8.2.1 Earlier Intervention

There is a clear connection between physical activity and fall prevention, and although age is not a predictor of a fall, the incidence of falls definitely increases with age. While some researchers suggested that programs should target seniors at the highest risk of a future fall, i.e., those above 75 or who have previously fallen (Karlsson et al. 2013), several studies made a case that some fall prevention programs should target lower risk seniors and younger adults. According to the CDC, 10,000 people turn 65 every day in the U.S. (CDC 2015). If efforts and programs, including education and preventive guidance, could reach people prior to age 65, some of the prevalent issues related to senior fall risk, such as lack of balance and lost muscle mass, could be addressed earlier through targeted exercise programs. In 2013, only 15.7 percent of people in the 55 to 64 age group met federal guidelines for aerobic activity and muscle strengthening (AAMS). While that number is 23 percent higher than ten years ago, there is still room for improvement, both broadly and targeted by socio-economics. Launching education campaigns and providing support earlier may help put Americans in a better position to avoid falls as they age. This could be especially true for Hispanics and low-income populations whose AAMS levels are currently significantly below recommended guidelines (Cameron 2015).

### 8.2.2 Multicomponent Interventions

Multifactorial interventions tackle fall risks from a variety of angles and can reduce fall risk by 24 percent (Houry et al. 2016) to 28 percent (Stevens, Noonan, and Rubenstein 2010). Some studies indicate that the most effective interventions report reductions of 35 to 40 percent (Houry et al. 2016). Consequently, many practitioners recommend that multifactorial interventions become more common practice in fall prevention programs. The AGS/BGS goes further to recommend that multifactorial interventions should also include environmental modifications (Shubert 2011).

### 8.2.3 Aging in Place

With the high cost of long-term care and seniors' desire to remain independent, studies shows that a large majority of seniors would like to remain in their homes as long as possible (Mayo-Wilson et al. 2014) (Farber et al. 2011) (BiPartisanPolicyCenter 2016). As there is evidence that spending healthcare funds on efforts to keep seniors in their home, through coordinated care services and housing modifications, can lower healthcare expenditures, several studies recommend that funding be more flexible and less bifurcated (Szanton et al. 2011) (Bridges 2013) (CSC 2015).

Several studies also suggest that we should be building for the future. As previously noted, because of its age, most of the current housing stock does not have the type of features that support seniors aging-in-place and living in the community (BiPartisanPolicyCenter 2016). In most instances, if a senior wants to remain in his/her home, it requires modifications such as ramps, installation of grab bar, improved lighting, modifying entrances, and many other actions to make it safer. However, incorporating universal design or accessibility standards into new housing stock as it is being built is much less expensive than retrofitting it at a later date to meet the needs of an aging senior or a disabled individual. Ohio alone reported spending more than \$5 million annually to modify homes to promote independent living (OIPP 2012). This suggests that a more proactive approach be taken with building codes to ensure certain accessibility features are embedded into all future housing development.

As seniors are encouraged to have more active lifestyles, some studies recommend that fall risk policies and programs pay more attention to the risks associated with outdoor falls and the built environment. Most current programs emphasize the prevention of indoor falls, but healthy, older adults often suffer falls due to environmental hazards on sidewalks, curbs, and streets. Studies show that many of these

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hazards are modifiable and healthy community-dwelling seniors could benefit from improvements in outdoor environmental conditions (Li et al. 2006) and improvements in community livability measures such as access to transportation and recreation/green space for physical activities (Farber et al. 2011). Despite the increase in practices and technologies that might better assess the connection between falls and the built environment and how to address them, only a small number of studies have been conducted that evaluate their effectiveness and provide information about livable communities that support aging in place and active senior lifestyles (Farber et al. 2011).

A few studies suggested that municipalities tap into technologies, such as geographic information systems (GIS), to identify neighborhoods with high concentrations of seniors or where a significant number of falls have occurred to prioritize livability measures as well as maintenance in those communities (Li et al. 2006) (Kelsey et al. 2010) (Farber et al. 2011).

### 8.3 Intervention and Program Evaluations: Performance and Cost

The U.S. Preventative Services Task force (USPSTF) is an independent expert panel that provides evidence-based recommendations for preventive services and primary care to clinicians and health systems. Recommendations are graded on a scale of "A" to "D," along with "I" (Insufficient). "A" recommendations indicate there is a high certainty the service being evaluated will provide a substantial net benefit. A "B" grade indicates the service is recommended with the likelihood of providing moderate benefit. A "C" grade indicates that providers may provide the service depending on individual circumstances. Those graded "D" are not recommend for use because there is either no benefit from the service or its harms outweigh its benefits. An "I" grade indicates there is not enough evidence to assess the benefits or harms related to the service because the evidence is either lacking or of poor quality (Moyer 2012).

This grading scale is important because it impacts potential funding for fall prevention interventions. Under the Medicare Improvement for Patients and Providers Act of 2008, which is responsible for services related to fall prevention, only services that receive an "A" or "B" grade from USPSTF are eligible for reimbursement. Given that the Medicare program is the largest payer of healthcare services in the U.S., its reimbursement policies for service payment and practices have an enormous influence on the implementation of preventive care (Avin et al. 2015).

Several researchers critiqued not the interventions or programs being implemented, but how studies describe interventions and report on their outcomes, indicating that key constructs for comparison and evaluation of the studies were missing (Mahoney 2010) (Stevens et al. 2006). The USPSTF conducts extensive literature reviews of the fall prevention interventions and programs in practice prior to releasing grades and recommendations. Several studies suggest a more uniform method of reporting on fall prevention to clearly articulate intervention constructs. Content, process, and target groups would facilitate outcome comparisons and enable the USPSTF to make clear determinations about the effectiveness of an intervention (i.e., assign an "A" or "B" grade). For example, although many practitioners see the clear benefit of certain interventions, such as home hazard modifications and fall risk education and counseling, USPSTF currently assigns these interventions an "I" because, according to the panel, they lack sufficient efficiency for or against use in the community (USPSTF 2012).

Along these same lines, several studies recommend creating a standard, uniform methodology to determine costs associated with falls and fall prevention (Stevens et al. 2006). Although costs are frequently cited in reports, a closer examination of how costs are determined indicates a wide variation in what is and is not included. It also highlights a lack of recognition of cost variations between different geographies, including urban versus rural, and state-to-state. While studies using international data may

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report equivalent costs in another country's currency, conversions in currencies do not fully reflect the variation in costs across geographies (Stevens et al. 2006) (Burns, Stevens, and Lee 2016).

Even the definition of a "fall" can vary between studies as well as between clinicians and patients (Kelsey et al. 2010) (Avin et al. 2015) (WHO 2008). The World Health Organization (WHO) suggests fall prevention studies include a clear operational definition of what constitutes a fall, with very explicit criteria about when an event should or should not be included in a study (WHO 2008).

#### 8.4 Coordinated Care and Funding

Increased senior falls are significantly burdening healthcare costs, but there is rarely a mandate to coordinate interventions (Child et al. 2012). Several studies recommend coordinating fall prevention strategies, interventions, and funding. Replicating and sustaining successful model programs can only be accomplished through coordinated, expanded, and stable funding. Studies suggest that broad strategic planning is needed across various agencies (federal, state, and local) and service providers to ensure that programs are effective and sustainable, and that resources from staff to funding are available for the various components of fall prevention programs (Child et al. 2012) (Hester and Wei 2013) (Bezaitis 2008).

#### 8.5 Training

In addition to calling for more funding, several studies recommend all healthcare professionals get more training in senior fall assessments and prevention intervention services. OTs and many PTs receive extensive training, but there are not enough professionals in these fields to accommodate the need, and competition between providers often dilutes their availability across service providers. Physicians and nurses who receive training in fall prevention assessment and interventions, as well as first responders, can help expand resources and reach of seniors fall prevention efforts (Child et al. 2012) (Demons et al. 2014) (Avin et al. 2015) (Houry et al. 2016)

In 2015, the CDC launched online training specifically targeted to healthcare providers to help physicians become more familiar and at ease with fall assessments. As an extra incentive, the training offers continuing education credits (CEUs). They also created a clinical decision support module, capable of being integrated into a medical practice's electronic health records systems, to help physicians coordinate clinical care with community-based prevention programs (Houry et al. 2016). However, more healthcare providers need to be aware and take advantage of these resources.

#### 8.6 Education and Communication

Many studies reported a need for better education around fall prevention and how to reduce fall risks. Even with the multitude of online resources available from the CDC and NCOA, studies report most people's perceptions about what causes falls and how to avoid them are very limited. Seniors often think that external factors, such as home and environmental hazards, are the major cause of falls, when, in fact, falls can be more often be traced to an individual's functional capacity and biological factors (Phelan et al. 2015). Some studies report that the fall prevention strategies seniors find acceptable, such as home modification and low-intensity exercise, are not as effective as other interventions, such as balance and strength training. While reducing home hazards and using mobility aids such as canes are steps that can be taken to remove fall risks and reduce falls, few people realize the impact that exercises such as strength and balance training have on fall reduction (Stevens, Noonan, and Rubenstein 2010). Moreover, several studies point out that although seniors grasp that falls can be problematic, they rarely think it is a problem that they themselves need to address because they are not going to fall (Child et al. 2012; Stevens, Noonan, and Rubenstein 2010).

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These factors indicate that, not only is more education needed, it may also be necessary to change how the message is communicated. Research shows that at least 25 to 30 percent of falls can be prevented by a better understanding of senior falls and implementation of preventative measures. With the staggering costs that senior falls are causing the healthcare system and the potential of avoiding many falls through various interventions, several studies recommend that it is time for a large-scale education or social marketing campaign to help build public awareness of the issue (Bezaitis 2008). In conjunction with raising awareness of the issue, studies suggest that how fall prevention programs are marketed must also change, in line with NCOA recommendations, to shift the message from "fall prevention" to a more positive, healthy living type of message, such as independent aging (Cameron 2015).

## 9 BARRIERS TO FALL PREVENTION POLICIES AND PROGRAMS

Evidence shows that many senior falls can be prevented through proper design and implementation of fall prevention programs (Cusimano, Kwok, and Spadafora 2008) (Shubert 2011) (Stevens and Burns 2015). Yet this evidence has not created widespread adoption, and falls among the elderly have continued to increase to the point that they are now considered a major public health concern (Child et al. 2012) (Cameron 2015) (Shubert 2011). The following barriers impact the development of policies for senior fall prevention in a myriad of ways: perception about falls and fall prevention programs, from both seniors' and the general public's perspectives; "evidence" supporting investment in specific interventions and programs; lack of coordination across various government agencies; and limited and lack of funding coordination. While many of the barriers noted here are not specific policy or regulatory obstacles to effective senior fall prevention programs, they do have implications for the creation of senior fall prevention policies as well as for the regulations that govern the management of their resources and administration.

As previously mentioned, the survey conducted by the State Falls Prevention Coalition workgroup identified three major policy barriers to effective implementation of senior fall prevention programs: lack of funding; lack of capacity; and inadequate engagement from Coalition members (Schneider et al. 2016). The following barriers are in line with and expand on those themes.

### 9.1 Economic

At an individual level, although there is often the assumption that seniors can cover the expense of fall prevention interventions, this is not always the case. Costs related to purchase and use of assistive devices, drugs to help control balance or other ailments related to fall risks, and fees for classes, as well as costs for transportation to and from interventions such as exercise classes, can sometimes be beyond the means of the elderly. Seniors on fixed incomes need to prioritize expenditures; if they do not understand the value or immediately see results from an intervention, they may not spend the money. Low-income seniors, especially, rarely have "discretionary" funds to spend on fall prevention interventions even, if in the long-term, the interventions might save them money (Child et al. 2012).

Supervised one-on-one interventions with seniors are resource-intensive from both a time and cost perspective. But group classes often require the senior to travel to class locations, which result in travel time and costs generally being borne by seniors who do not have adequate financial resources (Hamm et al. 2016).

A myriad of economic factors also influence delivery of fall prevention services, from assessments to interventions. Allowable reimbursements from Medicare, Medicaid, and even private insurance often influences who performs the assessment and how it is completed. There is a wide range in what is covered and paid for under fall prevention. Healthcare providers are hesitant to perform assessments or help coordinate interventions when they believe that there is no way to cover related costs (Child et al. 2012).

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## 9.2 Fall Prevention Expenditure and Cost Assessments

Although costs related to falls are commonly cited in the literature, there is currently no uniform methodology used to determine and report expenses associated with falls and fall prevention. Without a uniform method, it is difficult to compare and understand costs and cost trends. The CDC has conducted several cost analyses focused on assessing direct medical costs, but even their studies use various methods to capture costs (Stevens et al. 2006) (Burns, Stevens, and Lee 2016).

Additionally, few studies paint a full picture of the financial burden that falls create for the elderly individual and their families. Although various studies have attempted to quantify some external costs (i.e., non-direct medical) such as those related to home modification, there is no current standard method to capture and assess what some might consider intangible costs related to lost wages, processing insurance claims, reduced quality of life, and a senior's decreased functional capacity (Stevens et al. 2006) (Burns, Stevens, and Lee 2016).

Studies that evaluate expenditures related to specific interventions such as home modifications also have a difficult time accurately depicting the value of the intervention because costs can vary significantly between communities. Costs in a large city may not be comparable to costs incurred in rural areas, especially those with limited access to long-term care facilities. A common method used to ascertain the value of home modifications is to examine averted healthcare costs, but those values can be subject to geographic variations from healthcare to material and labor costs for home renovations (Ling et al. 2008).

## 9.3 Intervention Practices and Target Populations

Not every intervention works or is appropriate for every demographic. All too often fall prevention programs are developed to prioritize high-risk groups, but there is no "one size fits all" in fall prevention and each program's target population should be assessed to address their specific risk factors (Ling et al. 2008).

Culture also plays a role in elderly adults' acceptance of various types of interventions. Grab bars and other assistive devices may be acceptable to some seniors, but others may balk at the idea of installing them as they can affect the way seniors view their independence. Personal choice may also affect whether individuals will participate in group classes or prefer individual, in-home exercise classes. Even the type of exercise classes being offered could impact seniors' participation. Although Tai Chi is often cited as one of the best exercises for fall prevention, studies suggest that some American men have dismissed participation in Tai Chi classes because the exercise seems too feminine or, in some instance, too foreign. Conversely, a dance-based, Westernized exercise approach might not appeal to multiethnic individuals (Child et al. 2012) (Stevens and Burns 2015).

Moreover, too many interventions target people *after* they have fallen, but avoiding falls in the first place could help lower the rate of senior falls as well as the related costs as people age (Child et al. 2012). Most of the focus of the reviewed studies focused on changing the behaviors of seniors (i.e., those over the age of 65), but, in fact, this barrier starts building at a much earlier age through misconceptions about elderly falls and the aging process. Although there is no way to "mandate" exercise, there may be ways to incentivize physical activity through design of the built environment, lower healthcare premiums, and other strategies, which could effectively lower falls risks before individuals reach age 65. This, in turn, could lower healthcare costs (NCHS 2014) (Li et al. 2006).

## 9.4 Home Assessments and Modifications

Although international guidelines on fall prevention call for Occupational Therapists to conduct onsite home visits and home assessments with seniors that have fallen and been referred for inpatient therapy, such visits can be costly both from a monetary and time perspective. Consequently, the visits and assessments are often not conducted. Photography-Based Home Assessments (PhoHAs), as described in the section on innovative

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practices, could be a less expensive option, but they are not as complete and effective as an OT assessment (Daniel et al. 2013).

Older adults living on fixed incomes often do not have the funds necessary to make the type of home modifications and improvements that would allow them to safely age in place and reduce fall risks. While some states and jurisdictions have resources to help seniors, these resources are often limited according to age, income, and even level of disability (OIPP 2012).

## 9.5 Transportation and Access to Interventions

Not all community-based seniors drive or have access to transportation options that allow them to participate in fall prevention programs. Travel costs, whether it is via private car, taxi or public transportation, may also be prohibitive for seniors on a fixed budget. Beyond access to and costs of transportation, travel distance, parking availability, and seasonal constraints such as snow and ice may dissuade seniors from participating in available programs. Moreover, seniors who are reliant on public transportation have to consider how well or if bus schedules align with the scheduling of such programs, or if the amount of time spent on the bus is worth participation (Child et al. 2012).

## 9.6 Training, Resources, and Coordinated Care

A commonly stated barrier is that physicians do not assess senior fall risks on a regular basis, if at all. Many physicians tend to be reactive rather than proactive, and only ask about fall history if a senior looks as though he/she had recently suffered a fall (Stevens and Phelan 2013). The AGS/BGS recommends that a multifactorial approach be used to assess senior fall risk factors and that interventions be tailored to the individual. However, it appears that few physicians, especially primary care physicians, actually follow the recommendation and some may even be unaware of it. Physicians report not knowing how to conduct a fall risk assessment and not knowing enough about options for fall prevention interventions. Many healthcare professionals also identify shortage of time as an impediment to offering fall prevention assessments and services to their already overloaded patient schedules. Unfortunately, visits to primary care physicians are the most logical place for seniors to be assessed and referred, as necessary, to the appropriate provider of fall risk interventions (Houry et al. 2016) (Stevens and Phelan 2013) (Child et al. 2012). (Hester and Wei 2013).

Several studies cited the lack of qualified staff to administer fall prevention programs and interventions as well as the need for improved training across healthcare disciplines (Child et al. 2012). Currently, fall prevention and management strategies occur in multiple settings, are administered by different providers, offer assorted levels of service, and are provided over varying lengths of time. However, they are rarely coordinated. There is no guarantee that a senior coming into contact with one provider will receive a referral to other providers that offer activities shown to reduce falls based on their risk level and age (Ganz, Alkema, and Wu 2008; Bezaitis 2008) (Hester and Wei 2013).

Too many of the fall prevention services and care provided to seniors are not coordinated or standardized. The CDC created STEADI, a portfolio of evidence-based fall prevention materials, to help healthcare providers improve their standard and delivery of care to seniors. STEADI is a good first step to getting seniors the care they need because it can help promote patient referrals to community-based fall prevention and intervention programs (Stevens and Phelan 2013). However, based on the literature, it appears that healthcare professionals would also benefit from a guide that encourages and helps them to design an optimal strategy to coordinate fall prevention and management between various healthcare providers and funding streams (Child et al. 2012).

Coordinated care is also hampered by rising healthcare costs and lack of coordinated funding options. Agencies often advocate for their particular programs, which may pit them against other agencies and

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organizations seeking the same or similar funding stream. This competition for the same resources dilutes the amount of funding for all fall prevention services (Child et al. 2012).

## 9.7 Research

Being able to replicate a senior fall prevention program or intervention with similar, positive results is key to creating sound policy and programs. Otherwise, outcomes from one community initiative could either be an anomaly or only workable in that specific environment. Poor reporting of the components and delivery of fall prevention programs and interventions makes it difficult to determine their effectiveness. Systematic reviews of randomized trials rely on detailed information about the constructs of a program, including its content, process, and target group selection to properly compare and evaluate its effectiveness against other programs. A program could be very effective, but if researchers are unable to determine its effectiveness because of inadequate details, the program will not be recommended. Not only can this waste of time and money, it can also limit access to programs that may be highly beneficial for specific fall risks and/or age groups. For example, although many practitioners found multifactorial risk assessments valuable, at one time the USPSTF did not recommend them for community-dwelling seniors because there was an "uncertainty of evidence" supporting their benefit (Cusimano, Kwok, and Spadafora 2008) (Mayo-Wilson et al. 2014) (Mahoney 2010).

What complicates matters even more is that not all studies specify their operational definition of a "fall." In some cases, seniors participating in the study use their own interpretation of what counts as a "fall." Many older adults describe a fall as a loss of balance, but healthcare professionals may think about a fall according to the various aspects or events that lead to the injury or the health issue (Kelsey et al. 2010) (Avin et al. 2015). These are important distinctions. Consequently, the World Health Organization (WHO) suggests that studies have a clear operational definition of what constitutes a fall, with very explicit criteria about when an event should be included or excluded in a study situation (WHO 2008).

Further, most studies do not delineate between indoor and outdoor falls. However, failing to distinguish between where the fall occurs makes it difficult to determine the magnitude of a fall risk factor. Most current policies and prevention programs focus on indoor falls, but community-based interventions should also be considering the health status, level of physical activity, and other characters of seniors. Seniors are encouraged to walk as part of a regular exercise regime, but they need to be cautious when walking outdoors. Current fall prevention efforts do not adequately address outdoor environmental hazards (e.g., loose bricks, uneven surfaces, lack of ramps at intersections). However, these hazards may factor into the decisions seniors make about engaging in outdoor activities (Kelsey et al. 2010).

## 9.8 Education and Communication

Effective fall prevention strategies require that individuals adopt new behaviors, from exercising to modifying their home, to actively talking with their physicians and caregivers about fall-related issues. However, since few individuals, especially seniors, see falls as being relevant to them, they are unlikely to alter their behaviors (Stevens, Noonan, and Rubenstein 2010). Alternatively, seniors may see falls as a part of the aging process and outside of their control, which makes them resistant to engaging in fall prevention activities (Child et al. 2012).

Over the last 20 years, more than \$24 million has been spent by the CDC on fall-related research and programs. Under the Safety of Seniors Act of 2007, the Department of Health and Human Services was authorized to support a national education campaign designed to raise awareness around fall prevention. The legislation also continues funding for risk assessment and intervention research focused on senior falls (Hester and Wei 2013). Materials such as the CDC's STEADI have been developed to help educate seniors (and healthcare providers) about fall risks and management strategies (Stevens and Phelan 2013), yet many seniors and their families or caregivers are still not adequately versed in fall risk factors or risky behaviors

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that can contribute to a fall. They are also unaware of the various actions and interventions that could help reduce fall risks. Moreover, even if a senior has fallen, all too often, no fall risk assessment is conducted because assessments have not yet been adopted as a standard healthcare practice (CDC 2015). This suggests that the free fall prevention guides available on the CDC's website and the materials that CDC produces for primary care physicians may not be effective. Therefore, a new paradigm for communicating falls risks may be needed. Some studies indicate that there may be too much reliance on education "materials" and not enough attention paid to one-on-one assessment and guidance from clinicians (Hester and Wei 2013) (Stevens and Phelan 2013).

There is also a gap or mismatch between strategies that seniors find acceptable and those that research has shown to be the most effective in preventing falls. Although seniors may be amenable to home modifications and low-intensity exercise to help reduce their risk of a fall, they may be less interested in participating in balance and strength training activities (Stevens, Noonan, and Rubenstein 2010).

## 9.9 Technology

Many technologies have evolved that could be beneficial and cost-effective ways to address senior fall prevention. Unfortunately, many rely on connections to the Internet. Although survey-based studies conducted in 2013 indicated that 59 percent of seniors report using the Internet and 47 percent have broadband connections, the percentage of seniors with access to the Internet who actively use it varies widely by income, education, and age. For example, use of the Internet among seniors older than age 75 years drops greatly. So seniors without Internet access or acumen cannot or do not take advantage of many of the technological advances now available (Fischer et al. 2014). In addition to access barriers, there are also cultural barriers and privacy issues associated with the use of medical devices for home-based monitoring, which would have to be addressed to ease seniors' fear about utilizing these technologies (Patel et al. 2012).

Fall prevention technology faces an uphill battle with seniors for a variety of other reasons. Barriers to use include the inability to purchase devices (e.g., computers, smart phones) when seniors are on a fixed income and have limited funds; difficulty learning and understanding how to effectively use devices; tendency to lose devices; and even some skepticism about the benefits of the technology (Orlov 2016).

Additionally, although there are multiple commercial products publicly available, few studies of these products in long-term, real world use have been conducted to evaluate their effective implementation. These types of evaluations can be difficult because they require significant resources and time. Recruiting seniors for longitudinal studies of technology also tends to be problematic because many of the individuals may have cognitive impairments or may even die before follow-up interviews and assessments can be conducted (Chaudhuri, Thompson, and Demiris 2014).

## 10 CONCLUSION

Several researchers have identified falls among the elderly as the public health priority of the decade (Shubert 2011) (Houry et al. 2016). Falls have a profound impact on the elderly and their caregivers, and the costs borne by society are huge and growing despite the fact that many falls are preventable. A plethora of both descriptive and empirical research on senior fall prevention exists, much of which has been conducted in the past ten years. Studies have examined the impact of one type of intervention, such as home modifications, as well as multifactorial interventions, which attempt to assess the impact of combining multiple intervention strategies. In conducting this literature review, Solutions scanned numerous articles that summarized the results of multiple studies qualitatively as well as meta-analyses that attempted to synthesize data from multiple studies quantitatively. This scan helped identify some of the most commonly used and recommended fall prevention interventions and models, as well as several innovative strategies.

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Although seniors will continue to fall regardless of what interventions and programs are in place, the goal is to minimize the risks as much as feasible (Shubert 2011). Moreover, adoption of holistic, patient-focused fall prevention policies and practices that include seniors in active decision-making roles versus being passive recipients of services is necessary for effective implementation of fall prevention programs (Child et al. 2012).

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## APPENDIX

### ENACTED STATE LEGISLATION ADDRESSING SENIOR FALLS (as of 2014)

State	Session Law and Statute Information
California	<a href="#">Cal. Health and Safety Code §125704</a> (California Osteoporosis Prevention and Education Act) Requires the department of health services to develop effective protocols for the prevention of falls and fractures and establish these protocols in community practice to improve the prevention and management of osteoporosis.
	<a href="#">Cal. Welfare and Institutions Code §9450</a> Requires the development of the "aging in place" concept be recognized and supported by the state as a means to retaining elders in their home with less injury. Requires that funding for education and making home improvements be facilitated through public and private sources. Requires that recommendations for changes in home modification policies and information for home modification projects and products be developed.
Connecticut	<a href="#">Conn. Gen. Stat. §17b-33</a> Establishes a fall prevention program within the department of social services that: supports research, development and evaluation of risk identification and intervention strategies; establishes a professional education program in fall prevention; and oversees and supports demonstration and research projects.
Florida	<a href="#">Fl. Stat. § 944.804</a> Requires the department of corrections to establish and operate a geriatric facility where generally healthy elderly offenders can perform general work appropriate for their physical and mental condition in order to decrease the likelihood of falls, accidental injury and other conditions known to be particularly hazardous to the elderly.
Hawaii	<a href="#">Hawaii Rev. Stat. § 321-225.5</a> Establishes a fall prevention and early detection coordinator within the Department of Health's Emergency Medical Services and Injury Prevention

	System Branch responsible for coordinating provision of public and private services that focus on fall prevention and early detection for older adults.
<b>Illinois</b>	<a href="#">Ill. Rev. Stat. Ch. 210 §155/20</a> Requires long-term care hospitals to report data on elderly falls to the department of healthcare and family services as part of the Long-Term Care Hospital Quality Improvement Transfer Program. Participating hospitals must report the number of falls with injury per 1,000 patient days in accordance with guidelines established by the Fall Prevention Protocol of the National Database of Nursing Quality Indicators (NDNQI) and the number of falls among discharged long-term care hospital patients whose fall during the hospital stay necessitated an ancillary or surgical procedure.
<b>Maine</b>	<a href="#">2005 House Bill 1214</a> Promotes research designed to develop, implement and evaluate the most effective approaches to reducing and treating falls among high-risk older adults. Educates health care professionals and providers about fall prevention, evaluation and management, and oversees and supports demonstration projects designed to prevent falls among older adults.
<b>Massachusetts</b>	<a href="#">Mass. Gen. Laws Ann. Ch. 111, §224</a> Establishes a commission on falls prevention within the department of public health.
<b>Minnesota</b>	<a href="#">2013 Minn. Laws, Chap. 108</a> Establishes requirements for instructors, training content, and competency evaluations for unlicensed personnel. This training includes the prevention of falls for providers working with the elderly or individuals at risk of falls. (2013 House Bill 1233/Senate Bill 1034)
<b>New Mexico</b>	New Mexico Stat., Ch. 37, § 1, 24-1-36 ( <a href="#">2014 HB 99</a> ) Establishes a statewide and community-based older adult fall risk awareness and prevention program.
<b>New Jersey</b>	<a href="#">Assembly Joint Resolution 52</a> Designates the third full week of September in each year as Fall Prevention Awareness Week.
<b>Oregon</b>	<a href="#">OR. Rev. Stat. §410.420</a> Requires funds appropriated through Oregon Project Independence to be used for services to support community care givers and strengthen the natural support systems for seniors including fall prevention activities.
<b>Texas</b>	<a href="#">Tex. Human Resources Code Ann. §161.351-3</a> Establishes "Fall Prevention Awareness Week." Allows the state's department of aging and disability services to develop recommendations to: raise public awareness about fall prevention; educate older adults and individuals who provide care to older adults about best practices to reduce the incidence and risk of falls among older adults; encourage state and local governments and the private sector to promote policies and programs that help reduce the incidence and risk of falls among older adults; encourage area agencies on aging to include fall prevention education in their services; develop a system for reporting falls to improve available information on falls; and incorporate fall prevention guidelines into state and local planning documents that affect housing, transportation, parks, recreational facilities and other public facilities.
<b>Washington</b>	<a href="#">Wash. Rev. Code §43.70.705</a> Requires the department of social and health services to establish a statewide fall prevention program, including: networking with community services; identifying service gaps, making affordable senior-based, evaluated exercise programs more available; providing consumer education to older adults, their adult children, and the community at large; and conducting professional education on fall risk identification and reduction.

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	<a href="#">Wash. Rev. Code §74.39A.074</a> Requires long-term care workers to complete 70 hours of long-term care basic training on "core competencies," including fall prevention.
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**Source:** NCSL (01/04/2016). Elderly Falls Prevention Legislation and Statutes. Washington, DC: National Conference of State Legislatures. Available Online: [www.ncsl.org/research/health/elderly-falls-prevention-legislation-and-statutes.aspx](http://www.ncsl.org/research/health/elderly-falls-prevention-legislation-and-statutes.aspx)

## 2016 STATE FALL PREVENTION COALITION SURVEY RESULTS

### Sector Representation in State Fall Prevention Coalitions

(Percentage of Coalitions with Sector Representation)

<b>50% or More</b>	<b>Less than 50%</b>
State public health department (91%)	Health care/liability insurance (35%)
Hospitals (88%)	Law offices (*)
Area agencies on aging (85%)	Fire departments (*)
State unit on aging (79%)	Exercise professionals (*)
Academia (76%)	Brain injury associations (*)
Local/county PH (74%)	Long-term care/continuing care retirement communities (*)
Trauma centers (68%)	Hospital associations (*)
Home health (65%)	Universal design consultants (*)
Other aging agencies (62%)	Area health education centers (*)
Emergency medical services (53%)	Meals on wheels (*)
Physician organizations (50%)	Pharmacists (*)
Allied health organizations (50%)	Businesses (e.g., Lifeline, balance equipment) (*)
	Arthritis association (*)
	Aging and disability resource centers (*)
	American Association of Retired Persons (AARP) (*)
	YMCAs (*)

**NOTE:** Responses with percentages represent close-ended responses from the survey instrument. Responses with “(\*)” indicate open-ended responses reported by participants, thus, exact percentages are not reported.

### Importance of Coalition Activities

(n = 34 Coalitions)

<b>Activity</b>	<b>No. (%) of Coalitions that Selected “Very Important”</b>	<b>No. (%) of Coalitions that Selected “Not Important”</b>
Growing partnerships	29 (85)	0 (0)
Disseminating evidence-based programs	27 (79)	0 (0)
Getting falls data and conducting surveillance at the local, regional, and state level	24 (71)	0 (0)
Bridging gaps between health care organizations and other community agencies or community residents	23 (68)	0 (0)
Expanding the areas addressed by Coalition activities	15 (44)	2 (6)
Conducting education and training activities for Coalition members	14 (41)	0 (0)
Having a formal mechanism for identifying key goals	13 (38)	1 (3)
Enrolling more individual members	12 (35)	1 (3)
Having formalized procedures or strategies to select policies or programs to pursue	11 (32)	2 (6)
Meeting a designated percentage of goals	8 (24)	2 (6)
Having a formal committee structure	6 (18)	2 (6)

Source: Schneider et al. (2016) / STATE FALL PREVENTION COALITIONS

<b>Top Facilitators for “Actively Working On” Policy Goals</b>									
<b>(By Number of Coalitions Across All 8 NCOA Goals)<sup>a</sup></b>									
Facilitators	Policy Goals								
	Increase Program Availability (30)	Increase Awareness (24)	Build & Leverage Network (21)	Increase Provider Participation (19)	Enhance Data Collection (17)	Improve Community Activities (16)	Institute Evaluation (16)	Pursue Funding (12)	Total (155)
Active support from coalition leaders	16	20	17	15	10	11	10	8	107
Actions of an internal champion or key leader	16	13	12	11	10	12	9	6	89
Partnerships with other organizations helped expand support	13	11	16	10	5	9	6	5	75
Coalition members would not let initiative fail	11	11	14	9	5	7	6	7	70
Coalition partners provide in-kind or other resources	8	14	11	7	6	8	4	2	60
Coalition and partners have existing capacity to support work	8	9	9	6	6	7	8	1	54
Technical assistance from external agency	8	9	10	8	4	5	4	2	50
Outcome/evaluation data helped convince funders of value	9	4	8	3	5	6	6	5	46
Internal support for writing grants helped obtain resources	7	8	6	6	7	3	4	4	45
Policy essential to carry out mission	6	8	5	7	5	7	4	3	45
Older adults served as advocates for program or policy	2	5	5	3	2	5	3	2	27
Coalition partners able to modify policies to fit with other initiatives	4	3	5	1	1	4	3	0	21
Policy is low cost	2	6	4	3	1	2	1	1	21
Other facilitators	3	7	5	3	3	5	4	2	32

NOTE: Numbers in parentheses represent the number of state coalitions actively working on the goal.  
<sup>a</sup> For example, for the policy goal of “increase availability of programs,” 16 coalitions actively working on the goal ranked “active support from coalition leaders” as a top-ranked facilitator for that goal.

Source: Schneider et al. (2016) / STATE FALL PREVENTION COALITIONS

<b>Top Barriers to “Actively Working On” Policy Goals</b>									
<b>(By Number of Coalitions Across All 8 NCOA Goals)<sup>a</sup></b>									
Barriers	Policy Goals								Total (155)
	Increase Program Availability (30)	Increase Awareness (24)	Build & Leverage Network (21)	Increase Provider Participation (19)	Enhance Data Collection (17)	Improve Community Activities (16)	Institute Evaluation (16)	Pursue Funding (12)	
Obtaining funding-external	16	13	9	6	7	8	6	7	72
Obtaining funding-Coalition members	10	11	7	5	4	6	5	3	51
No capacity in Coalition members to support work	14	11	3	1	3	5	0	4	41
Unable to maintain agreement among partners	1	1	1	1	0	0	6	1	11
Turnover among Coalition members implementing policy	2	2	0	0	3	0	0	2	9
Obtaining support from Coalition members for continuing project activities	2	4	0	0	1	0	0	2	9
Key champion no longer with Coalition	2	2	1	0	1	0	0	2	8
Leadership at Coalition member organizations does not support	1	0	0	0	1	1	1	1	5
Coalition priorities changed	0	2	0	0	0	0	0	1	3
Coalition members or partners did not do what they promised	0	0	0	0	0	0	1	1	2
Other	1	3	4	3	3	2	2	2	20

NOTE: Numbers in parentheses represent the number of state coalitions actively working on the goal.  
<sup>a</sup> For example, for the policy goal of “increase availability of programs,” 16 coalitions actively working on the goal ranked “obtain funding-external” as a top-ranked barrier for that goal.

Source: Schneider et al. (2016) / STATE FALL PREVENTION COALITIONS

## Expert Panel with Biographies

### Non-Federal Members

- Nick Castle, PhD, Professor of Health Policy and Management, Center for Research on Aging, University of Pittsburgh
- Molly Dugan, Director, Support and Services at Home (SASH), Cathedral Square, Burlington VT
- Rodney Harrell, PhD, Director, Livable Communities, AARP, Washington, DC
- Marcia Ory, PhD, Associate Dean of Research/Regents & Distinguished Professor, Health Promotion and Community Health Sciences, Texas A&M
- John Pynoos, PhD, Professor of Gerontology, Policy and Planning, Andrus Gerontology Center, University of Southern California
- Lisa Shields, Falls Prevention Coordinator, Oregon Public Health Department
- Charles (Steve) Sparrow, KSPAN Coordinator, Kentucky Injury Prevention and Research Center, University of Kentucky
- Robyn Stone, PhD, Executive Director, LeadingAge Center for Applied Research, Washington DC
- Sarah Szanton, PhD, Associate Professor, Johns Hopkins University, CAPABLE Program, Baltimore, MD

### Federal

- Susan Hardman, Team Lead, Public Health Associate Program, Training and Education Team, Office for State, Tribal, Local and Territorial Support, CDC
- Karin Mack, PhD, Associate Director for Science (ADS), Division of Analysis, Research and Practice Integration (DARPI), National Center for Injury Prevention and Control (NCIPC), CDC

## Biographical Sketches

### Non-Federal



**Nick Castle, PhD**  
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Dr. Castle is a professor in the Department of Health Policy and Management at the University of Pittsburgh. He has over 140 first-authored publications in peer-reviewed journals and is working on five grant-funded initiatives. He serves on five editorial boards, including the board of *The Gerontologist*, and is a fellow of the Gerontological Society of America. He is currently examining staff turnover in nursing homes, the federal report card Nursing Home Compare, and nursing home administrator job satisfaction.

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Molly Dugan coordinates the development and design of the SASH model at Cathedral Square and assists in its statewide rollout. As a nonprofit housing developer, Cathedral Square works to provide affordable housing to low-income residents. Prior to working for Cathedral Square, she worked at the Department of Housing and Community Affairs for the State of Vermont. Her roles there included Community Development Specialist, Director of VCDP Program, Deputy Commissioner and Acting Commissioner.

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Rodney Harrell leads a group that works on innovative livable communities research, policy analysis, and solutions. He also works with the vice president of the Livable Communities and Long-Term Services and

Supports Team to develop, implement, and manage the team's research agenda. Once in place, those resources enhance personal independence; allow residents to age in place; and foster residents' engagement in their community's civic, economic, and social life. Rodney's research on housing preferences, neighborhood choice, and community livability are integral to the groundbreaking Livability Index, which measures the livability of every neighborhood and community in the United States. He is also a speaker, researcher, and blogger on livable communities issues and leads [@AARPpolicy](#) social media efforts.

Rodney joined the Public Policy Institute in March 2008 as a senior strategic policy advisor. Before joining AARP, he worked as a research and evaluation consultant, a researcher and instructor for the University of Maryland, and a Governor's Fellow in the Maryland Department of Housing and Community Development/Maryland Heritage Areas Authority.

Rodney graduated summa cum laude from the honors program at Howard University; earned dual master's degrees in public affairs and urban and regional planning from the Woodrow Wilson School at Princeton University; and received a PhD in urban planning and design from the University of Maryland, College Park, where he was a Wylie Fellow. He is a member of the Phi Beta Kappa and Phi Kappa Phi honor societies.

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Marcia G. Ory is a regents and distinguished professor in the Department of Health Promotion and Community Health Sciences within the Texas A&M Health Science Center School of Public Health, and serves as director of the Program on Healthy Aging within the school. Dr. Ory is recognized as an international leader in public health and aging with interests in designing health promotion and disease prevention interventions at the individual, health provider and service delivery level to improve the health and well-being of individuals across the life-course. She has a long history of applied prevention research starting in the 1980s when at the National Institute on Aging directing the Social Science Research on Aging program. Most recently, she has been responsible for local, state and national evaluations of evidence-based health promotion programs, including serving as principal investigator for a multi-site national study of the Stanford Chronic Disease Self-Management Program and multiple CDC-funded special initiative projects. Additionally, as co-director of the School's Health Technology and Patient Empowerment initiative, she is concerned with the development of novel technologies for patient screening, diagnosis, and intervention. Dr. Ory has (co-)authored 10 edited books, 40 book chapters, 20 edited issues in professional journals, and published approximately 350 articles in peer reviewed journals. Twenty-five articles have been cited at least 100 times, and another 35 have been being cited at least 50 times. For a complete CV see <https://sph.tamhsc.edu/hpchs/faculty/ory-bio.html>.

Dr. Ory is a fellow of several societies including the Academy of Behavioral Medicine Research, American Academy of Health Behavior, Gerontological Society of America, and Society for Behavioral Medicine. In

recognition of her contributions to the field, she was recently awarded the American Public Health Association Life Time Achievement Award by the Aging and Public Health Section.

Dr. Ory was a Post-doctoral Fellow and received an M.P.H. from the Johns Hopkins University School of Public and a Post-doctoral Fellow at the University of Minnesota. She received her Ph.D. from the Purdue University, M.A. from Indiana University and B.A., University of Texas, Austin, Texas



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Jon Pynoos is the UPS Foundation Professor of Gerontology, Policy and Planning at the Andrus Gerontology Center of the University of Southern California. He is also Director of the National Resource Center on Supportive Housing and Home Modification, and Co-Director of the Fall Prevention Center of Excellence which is funded primarily by the Archstone Foundation.

Dr. Pynoos has spent his career researching, writing, and advising the government and non-profit sectors concerning how to improve housing and long term care for the elderly. He has conducted a large number of applied research projects based on surveys and case studies of housing, aging in place and long-term care and teaches courses on Social Policy and Aging. Dr. Pynoos has also written and edited six books on housing and the elderly including [Linking Housing and Services for Older Adults: Obstacles, Options, and Opportunities](#); [Housing the Aged: Design Directives and Policy Considerations](#); and [Housing Frail Elders: International Policies, Perspectives and Prospects](#).

Dr. Pynoos was a delegate to the last three White House Conferences on Aging and is currently on the Public Policy Committee of the American Society of Aging (ASA). He previously served on ASA's Board and as Vice President of the Gerontological Society of America. He is a founding member of the National Home Modification Action Coalition.

Dr. Pynoos has been awarded both Guggenheim and Fulbright Fellowships. Before moving to USC in 1979, Dr. Pynoos was Director of an Area Agency on Aging/Home Care Corporation in Massachusetts that provided a range of services to keep older persons out of institutional settings. He holds undergraduate, Master's and Ph.D. degrees from Harvard University where he graduated Magna cum Laude.

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As the Injury Prevention Program Coordinator for the Oregon Public Health Division, Ms. Shields is responsible for the overall planning, implementation, oversight and evaluation of two state programs funded by the Centers for Disease Control and Prevention (CDC). She serves as the primary liaison between state, federal, and local organizations and stakeholders. Ms. Shields has presented her work at national meetings and webinars for the Centers for Disease Control and Prevention (CDC), the National Council on Aging, the National Center for Health and Aging, the American Society on Aging, regional Injury Prevention Networks, the Oregon Aging and Disability Resource Connection, and others. Her work focuses on preventing injuries, improving health care quality, reducing health disparities, and empowering people to stay healthy and maintain their independence.

Prior to joining the OR Health Authority, Ms. Shields was a Project Manager at Providence Health and Services where she managed hospital quality health improvements projects, including the Regional Fall Prevention Program. Ms. Shields also managed Providence Center for Outcomes Research and Education (CORE), in which she was responsible for project planning, protocol development, and project evaluation for large-scale projects and research studies, including The Oregon Health Study and The Social Determinants of Health Study.

Ms. Shields holds a Bachelor of Arts degree from Lewis and Clark College.  
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Steve Sparrow is the Core VIPP Program Manager for the Kentucky Injury Prevention and Research Center (KIPRC). He graduated from Eastern Kentucky University in 1979 with a BS degree in Biology and a minor in Chemistry. Steve previously worked for the Kentucky Occupational Safety and Health Program for 28 years and served as the Director of Compliance from 2003 to 2007. Steve came to work for KIPRC in 2008 as the KSPAN Program Coordinator where he has worked to build and strengthen our ICPG (KSPAN) and coordinates each of our four focus area committees. Steve is committed to promoting and supporting a number of injury prevention initiatives such as, NIOSH's Total Worker Health Program, the Kentucky Safe Aging Coalition (KSAC) in the area of fall prevention for older adults and in promoting and supporting the Safe Communities America program in Kentucky.  
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Dr. Robyn I. Stone, a noted researcher and leading international authority on aging and long-term care policy, joined LeadingAge to establish and oversee the [LeadingAge Center for Applied Research](#). Much of her work is targeted to low-income populations.

Stone came to LeadingAge from the International Longevity Center-USA in New York, NY, where she was executive director and chief operating officer. Previously, she worked for the Federal Agency for Health Care Policy and Research (now known as the Agency for Health care Research and Quality).

Stone also served the White House as deputy assistant secretary for disability, aging and long-term care policy and as acting assistant secretary for aging in the U.S. Department of Health and Human Services under the Clinton administration.

She was a senior researcher at the National Center for Health Services as well as at Project Hope's Center for Health Affairs. Stone was on the staff of the 1989 Bipartisan Commission on Comprehensive Health Care and the 1993 Clinton administration's Task Force on Health Care Reform.

Stone holds a doctorate in public health from the University of California, Berkeley.  
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Sarah Szanton developed a program of research at the Johns Hopkins School of Nursing on the role of the environment and stressors in health disparities in older adults, particularly those trying to “age in place” or stay out of a nursing home. The result is a program called CAPABLE, which combines handyman services with nursing and occupational therapy to improve mobility, reduce disability, and decrease healthcare costs primarily for low-income populations. She is currently examining the program's effectiveness through grants from the National Institutes of Health and the Innovations Office at the Center on Medicaid and Medicare Services. She is also conducting a study, funded by the Robert Wood Johnson Foundation, of whether food and energy assistance improve health outcomes for low-income older adults. Dr. Szanton is also working with the National Center for Healthy Housing (NCHH) on a collaboration to replicate the JHU CAPABLE program. A former health policy advocate, Dr. Szanton aims her research and publications toward changing policy for older adults and their families.

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## **FEDERAL PANELISTS**



**Susan Hardman**

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Susan Hardman is the Public Health Associate Program's team lead for Training and Education in the Office for State, Local, Tribal and Territorial Support. Prior to joining CDC in May 2011, she was director of the New York State Department of Health's Bureau of Injury Prevention where she was responsible for the assessment of the need for injury and violence programs by establishing program goals, developing, implementing, and evaluating evidence-informed programs to meet department of health goals and evaluate program efficiency.

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Karin Mack, PhD, is a senior behavioral scientist with the Prescription Drug Overdose Team within CDC's Center for Injury Prevention and Control. Dr. Mack is also an adjunct assistant professor in the Sociology Department at Emory University. During her 19 years of federal service, she has given more than 90 scientific presentations, authored more than 60 publications, and co-edited the book *Healthy & Safe Homes: Research, Practice, & Policy*.

Dr. Mack received her doctorate in sociology from the University of Maryland in College Park.

## Notes/Synopsis from Expert Panel One-on-One Discussions

### Overview

Solutions conducted 90-minute one-on-one phone call discussions with members of the expert panel to better understand common obstacles faced by communities in creating policies and implementing programs to reduce and prevent senior falls. Because panelists represented a variety of fields related to senior care, including the design, development, and renovation of senior housing; gerontology; and public health and medicine, they provided a myriad of perspectives about how to meet the needs of community-based seniors in regard to fall prevention. The experts provided input on the various causes of senior falls; discussed the monetary and emotional costs related to falls for both the individual and overall society; and identified potential opportunities to reduce and prevent falls to improve senior care and safety. Panelists also discussed obstacles they encountered as they worked with seniors or conducted research on senior fall risks and prevention, and provided Solutions feedback and recommendations on policy and programmatic measures they thought could help overcome these obstacles.

Prior to initiating the panel discussions, Solutions developed a list of topics and interview questions to facilitate the conversations and ensure issues of interest to HUD OLHCHH were addressed in a uniform manner. The topics and questions were reviewed by OLHCHH for approval and input before Solutions began calls with the panelists. Per OLHCHH's request, responses were anonymous to ensure panelists felt empowered to provide their unbiased opinions and observations.

In addition to the one-on-one calls, Solutions hosted two group webinars. Presentations developed for the webinars outlined key themes that emerged from the literature review as well as an overview of responses from the individual calls. Sharing this information allowed panelists the opportunity to discuss various ideas and issues raised by their peers and stimulated additional discussion. Panelists also shared information about best practice programs with which they were familiar (including their own), and identified and, to some extent, prioritized recommendations that they wanted to share with HUD and other relevant agencies to better coordinate senior care to reduce falls and promote aging-in-place practices.

Although the topics and questions constructed for the one-on-one discussions were targeted to senior falls prevention programs and practices, one of the major take-aways from the discussions was that many programs that achieve reductions in senior falls are not labeled as "senior falls prevention" programs. This revelation prompted a search for several additional articles related to coordinated care for community-based seniors conducted under CLIN 3 of the project.

### Panel Background (Questions 1-9)

- Nearly everyone on the panel identified their field as in or related to public health; one panelist indicated generalized public administration focused on policy and program development geared toward housing and health, and one identified as an urban planner. A few also specifically indicated gerontologist.
- Several panelists are researchers focused on a broad range of aging in place or "life-course" activities, which include key aspects of aging such as falls prevention or overall program/project design that has an impact or influence on fall prevention; a few specifically coordinate, or previously coordinated, their state falls prevention programs.

- Panelists generally identified themselves as either academics or practitioners (i.e., no one identified as a "regulator") and often as a hybrid of both.
- Nearly every panelist had worked in more than one field (e.g., housing, public health, policy, historic preservation, nutrition) during their career, so they brought a myriad of perspectives to the discussion. Several also worked in the private as well as public (both state and federal) sectors.
- Panelists' experience in fields related to aging issues and/or senior fall prevention ranged from 10 years (specifically falls prevention and senior safety issues) to 40 years (full range of aging issues).
- While not all panelists worked specifically for low-income populations, a good portion of nearly every panelists' work focused on or targeted underserved and low-income populations. In at least one case, the panelist's work with low-income populations was mostly due to Medicare.
- Although one panelist focused mostly on nursing care and retirement facilities, the rest worked mainly with programs in community-based settings or had some level of work in both due to a focus on "continuum of care."
- Fifty-six (56) percent of the panel does some level of work at a national and/or state level; 78 percent work mostly at the state, local or regional level (with some cross-over to national).

#### Causes of Elderly Falls (Questions 10-14)

Although a few panelists felt it best to leave a discussion of fall causes to findings from the literature review, other panelists discussed the gamut of causes, with a focus specifically on either home/environmental (e.g., bathrooms and kitchens on the whole, pets), physical issues (e.g., muscle weakness and lack of balance), or medication interactions. Panelists indicated that almost all falls occurred in the home environment, and nearly all agreed there was no "one" common cause (i.e., that falls more commonly result from a combination of environmental and physical issues; for example, bad vision makes it difficult to see things on the floor or a bump in a rug).

Panelists indicated that frailty was generally the primary cause of falls, and it was often difficult to attribute a cause of falls simply or directly to residential environment hazards (i.e., nearly all falls are multi-factorial). However, environmental/residential hazards are generally more easily addressed than a combination of muscle weakness and other causes such as medicine interactions.

Panel respondents indicated that the fall injuries they encounter in community-based settings are generally limited to bruising and minor lacerations, but some have encountered more serious injuries such as wrist and hip fractures, and even severe head trauma. They found the severity of an injury is often related to an individual's existing physical condition; seniors with better balance were less likely to suffer severe issues because it appeared their core strength helped them react to falls better. Panelists also indicated it is difficult to actually determine frequency of falls because (1) senior often do not report a fall and (2) most health data only track falls serious enough to require hospitalization.

Although few panelists had conducted or were aware of any studies/programs that looked at the home environment as an isolated variable or cause of senior falls, several mentioned some of the work they were involved with that examined specific variables within the home, such as slips and falls related to carpets or slippery surfaces. However, most of the panelists discussed taking a holistic approach to falls with the idea that the causes of falls may change over time (i.e., as people age) and it was more important to address the issue through coordinated efforts.

- One panelist whose organization tried to isolate and tease out fall data related to the home environment (e.g., slips on rugs, falls on stairs, bad shoes, and uneven surfaces) encountered two significant issues:
  - Seniors were reluctant to let landlords or family members know about the problem, worried that their landlord might evict them or family members might insist on them moving to a nursing facility; and
  - After environmental changes were made (e.g., rugs removed, furniture moved for better mobility), when the community health worker returned a few months later, everything was back to its original position.
- Another group worked to identify the impact of specific types of surfaces on injuries from falls. They developed a registry to record and make recommendations about modifications that should be made to help make seniors' homes safer. They identified factors such as installation of granite countertops in kitchen as not being optimal because of the potential to easily break/shatter glass; tiles in bathroom causing slips, etc.

### Impact of Falls on Seniors (Questions 15-27)

Panelists reported that most falls are not hugely dramatic, e.g., a fall could result from a senior leaning down to pick up something and simply slipping out of their chair, and most falls only result in bruising and muscle soreness. However, several panelists discussed the impact of more significant injuries, such as a broken wrist or hip, or traumatic head injury/traumatic brain injuries (TBI).

- One panelist's program looked at TBIs related to falls and found that it often led to quick onset dementia. Because of this finding, the organization developed a guide for seniors that specifically provided actions needed immediately if they suffered a head injury. The panelist indicated there is a need for more research on how fall-related TBIs impact dementia.

Often seniors do not acknowledge or report falls because they feel falling "goes with the territory" or they are worried that if they report the fall, they will end up in a nursing home. A few panelists mentioned that seniors were even reluctant to let landlords know about a fall caused by problems in their rental housing unit because they feared being kicked out of their home.

Several panelists also discussed how a fall can lead to a downward spiral as seniors become increasingly afraid of falling and fail to keep up physical and social activities, which, in turn, can lead to social isolation as well as a greater propensity to fall. Often fear of falling becomes a self-fulfilling prophecy.

Several panelists indicated that, except as anecdotally reported, only falls that require emergency medical care are generally recorded by most jurisdictions, so it is difficult to determine the physical impact of a fall (i.e., how severe it is) until someone who has fallen and been injured is hospitalized.

One panelist noted that, in some of their communities, Emergency Medical Services (EMS) are often called for "lift-assistance" when a senior falls and cannot get up on their own; apparently it is not uncommon for some people to call two or three times per week. After responding to the call, seniors generally decline transportation to the hospital. That community is beginning to use EMS data to track falls as well as identify potential ways to have EMS conduct assessments (both home and physical) while with the senior and help connect the senior and/or caregiver to available intervention resources.

The latest data in Oregon showed that approximately 965 people out of 100,000 over age 65 end up being hospitalized after a fall and that the rate increases with age. Individuals over 85 years old end up hospitalized after a fall seven times more often than their younger counterparts.

According to one panelist, 85 percent of fall injuries requiring hospitalization were most often some type of fracture, of which roughly 47 percent were hip fractures and approximately 10 percent other lower extremity fractures. Emergency department-only (i.e., hospitalization was not required) fall injuries tended to be less serious: approximately 37 percent were superficial/contusions and 24 percent were minor fractures. Individuals with fall injuries who ended up in the emergency department were often spread across various parts of the body, head/neck, and both upper and lower extremities.

If a patient is hospitalized, one panelist whose state tracks discharges found the length of stay due to a fall is generally three to six days. Another panelist indicated that the length of stay may be tied to Medicare allowances and that the amount of available reimbursement could influence how long someone is allowed to stay in the hospital or receive inpatient rehab services.

Panelists cited a variety of different hospital discharge rates/assignments depending on their locality. One estimated that, after hospitalization, 60 percent of seniors that had suffered a fall are sent to some type of nursing facility or inpatient rehab center. Another indicated that only about 14 percent were "routine" discharges (i.e., go home and self-care); another 10 percent were home-health (i.e., the senior was sent home but required services from a community health worker). The bulk of the seniors were sent to rehabilitation centers and/or skilled nursing facilities (3.8 percent died before being discharged).

Although the type of rehab after a fall varies, most seniors receive some level of physical as well as occupational therapy.<sup>1</sup> The type of rehab/therapy often depends not only on the injury, but also on what type of programs are offered by the facility. Regardless of whether the place of discharge is home or a rehabilitation facility, panelists indicated there is rarely any follow-up data collected regarding the fall and/or prescribed therapy treatment (i.e., to determine whether the cause of the fall was addressed). Additionally, not all states require rehabilitation facilities report outcomes to state health department.

In most cases, if a senior is discharged on "home-health," a community worker and/or therapist is generally assigned to assist with physical or occupational therapy. While most panelists could not address issues related to out-patient rehabilitation such as its frequency or length of time, most agreed that, if a senior had to travel to a center transportation, it presents a major barrier to treatment.

- One panelist relayed a story about how one small community in their state supports seniors with "ride-shares" to ensure that if they need to go to the doctor or physical therapy, someone in town is available to provide transport. In this particular community, the Chief of Police offers assistance with transportation coordination through the police department and EMS or first responders to ensure seniors get to where and what they need.

Coordinated care was the cornerstone of at least one panelist's work and another indicated that their organization tried to include primary care physicians, families, and others in as appropriate and

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<sup>1</sup> Physical Therapy is tied to the actual physical strength training and muscle building needed to recover from an injury, whereas Occupational Therapy helps seniors with activities of daily living, such as getting dressed, tying shoes, etc.

approved by the senior. However, for the most part, panelists indicated it was rare for senior care to be coordinated, even after a fall. Some of the reasons cited include:

- Privacy issues and/or the need to let the senior manage their own life/lifestyle. One panelist discussed how their program trained seniors to be their own advocates by teaching them about the questions that should be asked of medical professionals
- Lack of specialized or reimbursable funding that allows sectors/professionals to collaborate with each other.
- Lack of time to necessary for the professionals that should be involved to collaborate.
- Sometimes multiple doctors are involved in seniors' care, but they are not aware of each other. Seniors often get prescriptions filled in different places (e.g., they might go to the Veteran Affairs (VA) for a specific type of treatment and receive medicine there which their local pharmacist or physician does not know about).

A few panelists also indicated that, when coordinated care is provided, it generally only includes two groups (e.g., a doctor and physical therapist) rather than the range of professionals that need to be involved. Of particular concern was when pharmacists are left out of the circle, even though they are most likely to see the full "cocktail" of drugs being taken by a senior. But when seniors or caregivers do try to include the pharmacist, the various prescriptions being filled may involve too many different doctors for the pharmacist to track down or keep up with them.

A few panelists also indicated that it was difficult to accurately determine mortality rates related to falls, because (1) they vary significantly according to the age of person falling (i.e., a fall at aged 75 is more dangerous than one at age 65); and (2) it depends on how medical examiners code the death (cause of death may not be attributed to the "fall," but to the condition that resulted from the fall).

#### Types of Assessments Commonly Employed for Fall Prevention (Questions 28-60)

Panelists often responded to the assessment questions based on their particular field/area of expertise and direct experience with assessing fall risks.

All of the panelists indicated a variety of assessment tools were used to measure/predict a senior's fall risk and were generally tied to a specific program or previous propensity of falls. Also, all of the panelists indicated that, too often, assessments did not occur until *after* an initial fall. The most commonly used assessment tools include those that evaluate balance and muscle strength, such as Timed Up and Go (TUG), and the various assessments outlined in the STEADI guide produced by CDC.

Many of the falls programs discussed were specifically funded by the CDC (i.e., through their STEADI initiative) and although funding is no longer in place, the assessments and guides developed under STEADI are still employed because the materials are evidence-based and many of the recommended interventions are easy to implement by lay people (i.e., do not require significant or costly training).

At least one panelist mentioned using the multifactorial Missouri Alliance for Home Care (MAHC-10)<sup>2</sup> falls risk assessment tool, which includes screenings for ten factors, including home, nutrition, vision, and substance/alcohol use, to ensure a broader evaluation of the individual and their environment.

For the most part, panelists discussed health or physical conditions assessments and screening that are generally performed by a health care professional. Panelists indicated that, when a home assessments is performed, it is often as a result of a hospitalization and/or due to a medical event (i.e., after a fall, but not proactively). Home assessments are generally done by healthcare partners, such as local community health workers or occupational therapists, or community development groups such as Civic Works (in the case of CAPABLE) or Rebuilding Together. Panelists indicated that home assessments ranged from simple evaluations of how to remove or mitigate potential problems, such as scatter/throw rugs or hoarding tendencies, to more in-depth home assessments, which follow a prescribed (generally by the partner organization) checklist of items related to home safety for seniors.

A few panelists indicated that home assessments should not be limited to the internal environment of the home, but should also consider the livability of the surrounding neighborhood, such as measures of walkability, access to nutrition, existence of crime, to recognize the impact neighborhood and condition of streets/sidewalk can have on suggested interventions such as physical activities (e.g., walking, exercise, access to green space).

Panelists had varying opinions regarding the effectiveness of fall risk assessments to adequately predict senior falls. Based on the evidence, a majority felt assessments did a good job, but several pointed out that the biggest predictor of a fall is a previous fall, which does not require an in-depth assessment. Several panelists also noted that assessments/interventions tended to address an "individual" aspect or concern, but it made more sense to "look at the bigger picture" and try to address the multiple issues that impact seniors' ability to age in place.

Points made by several panelists included:

- 1) People tend to use the assessments with which they are familiar.
- 2) Rather than creating "new" assessments, research should be done to determine which are truly evidence-based and use them.
- 3) Many in-depth assessments take more time than seniors are willing to dedicate to completing them and, if an assessment is too long, seniors may start randomly answering questions without providing true/accurate responses.

One panelist commented "they came for the donuts" and didn't want to spend time completing an assessment when they could be socializing. But if there were no donuts or opportunities to socialize, they would not come to the senior center in the first place.

For the most part, panelists considered assessments useful predictors, but indicated that a single assessment or type of tool is not adequate. Nearly all of the panelists expressed the need to take a holistic approach and assess various aspects of an individual's physical and cognitive well-being, as well

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<sup>2</sup> MAHC-10 assesses 10 items: Age 65+; diagnoses (3 or more coexisting); prior history of falls (w/in 3 months); incontinence; impaired functional mobility; environmental hazards; polypharmacy (4 or prescriptions of any type); pain related to/affecting level of function; and cognitive impairment. Score of 4 or more is considered falls risk.

as their home/environmental risks. Several panelists indicated that, because falls are multifactorial, multifaceted assessment tools and approaches are the best strategy to improve senior care.

All of the panelists agreed that assessments should be bundled to cover a variety of aspects of a senior's life and lifestyle (e.g. home, medical, fitness), but there was no clear path as to who should conduct the assessment or when it should occur (beyond including a few questions during a senior's first Medicare Wellness visit). However, there was significant consensus that looking at one aspect of a senior's life without considering the impact of others would not reduce the risk or prevent falls (i.e., a holistic approach is definitely needed).

Panelists also agreed that a range of assessment tools, as appropriate to the individual, should be employed. For example, home assessments should include items *in* the home that are related to the individual such as a "shoe audit" (a count of how many pairs of high heels or shoes that could contribute to a fall are owned by a senior women). Nutrition assessments would evaluate the impact on bones and muscle strength.

Consensus among the panelists seemed to be that, if an assessment was done, it was up to the individual to share with others (i.e., a primary care physician would not unilaterally share information with the senior's other caregivers unless instructed to do so by the senior). Moreover, panelists felt an assessment should only be conducted if the senior has or is given an opportunity to act on the finding(s) of the assessment (e.g., a home assessment that indicates a need for grab bars should only be done if there is a service/way to install them). However, several panelists suggested that, even if an individual didn't actively share the results of an assessment, the results could be part of an electronic record for future use to help ensure caregivers/physicians are on the same page.

- To promote the idea of assessments, one panelist suggested that health insurance premiums be tied to willingness to undergo/complete an assessment (but only to lower rates, not increase) because it should/would be considered preventative care.

Because of the potential resistance of seniors to participate in assessments or interventions, it was also suggested that seniors be recruited to act as program champions to endorse specific programs and interventions with their peers to improve enrollment/interaction in supportive programs.

Although the panel was somewhat split on whether or not age alone could be considered an at-risk predictor of falls, all agreed that an "at-risk" age varied depending on the individual, their level of activity, genetics, etc. However, most panelists concurred that using age as a starting point, based on what data show about the acceleration of falls as individuals age, was acceptable to a limited extent. If nothing else, panelists thought it could jumpstart the education and awareness process to help people understand fall risks.

Seventy-five (75) percent of the panelists thought fall assessments (ranging from physical to nutritional screenings) should be conducted as a standard practice of care for people over a certain age, but there was little agreement on what that age should be. A few suggested approaches include the following:

- Since Medicare starts at age 65, use "Welcome/Introduction to Medicare" to include a couple of fall risk screening questions.
- When changing/upgrading insurance programs or at life marker milestones.
- Based on patient/doctor relationship and joint decision-making.
- Based on signs or reports of previous falls.

With the rise of certification programs in fields related to senior care, panelists were also asked whether they thought certifications related to assessments or screenings were necessary. Universally, panelists indicated that certifications for most assessments were unnecessary. Other points raised regarding the issuance of certifications was (1) what agency or organization would be responsible for providing the certification; (2) how and who would vet their process; and (3) how would expenses related to the process be covered. This discussion prompted one panelist to suggest that some senior/aging-in-place certification programs seem to only target individuals who can afford the services (e.g., seniors who can hire individuals with prestigious credentials).

Several panelists were emphatic that they wanted to avoid medicalization of assessments except where or as necessary (e.g., medical and perhaps nutrition), and that simple assessments, done by a variety of people, were preferred. Panelists felt that resident service coordinators, community health workers, social workers, and other home care workers were particularly well-suited to conduct a range of assessments as long as they received some minor training and were provided the right questionnaire/assessment tool.

However, if a home assessment indicated the need for home modifications beyond simple grab bars and handrails (i.e., a full bathroom remodel), panelists felt it was important that remodelers/ architects be versed in aging issues, and perhaps have some degree of understanding or certification in construction and design, such as "universal design" strategies and practices, as long as it was a clearly validated method.

To an extent, panelists felt that Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL)<sup>3</sup> could be helpful assessments because they take a functional approach to a senior's life and many of the measures have a correlation with senior falls. However, most panelists felt they were not needed for all seniors.

### ***Home Assessments and Modifications***

Few of the panelists discussed providing home assessments with modifications (beyond simple behavioral type modifications such as pulling up throw rugs) as part of their falls prevention programs and activities. Most of the discussion around fall prevention programs appeared to be related to physical activities (i.e., balance and exercise classes). (Note: This outcome could have been a disconnect created by the wording of the question or how people think about falls [i.e., home modifications are about "aging-in-place" and not an active way to prevent/reduce falls].)

One panelist, when asked about the "Safe Home" program in which he was involved, indicated that fall prevention was not an emphasis of the program. He further stated that, although participants were asked about previous falls, no specific (if any) actions were taken/provided to help the senior avoid future falls. However, the program did provide various levels of home modifications, which were clearly tied to making the senior's home safer and reducing home/environmental hazards related to fall prevention.

Panelists indicated that, when home assessments are conducted, those who conduct them and how they are performed varies. In some instances, skilled nursing facilities conduct home assessments with

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<sup>3</sup> ADLs are considered the tasks a senior need to do to begin their day, i.e., caring for and moving their body, such as walking, bathing, dressing, feeding themselves, being able to use the toilet. IADLs are the things that support independent living. While a person might need assistance with one or two items, they can do the bulk on their own. IADLs include cooking, driving, using phone or computer, shopping, keeping track of their finances, and managing their medications.

patients prior to discharge. This type of assessment may simply be a review with the senior and their caregiver, if available, of potential home hazards; these assessments may not include a home visit of any sort. In others, an Occupational Therapist (OT) may be assigned at least one visit to review home hazards and make additional recommendations. At least one panelist thought these types of assessments were ineffective without a follow-up home visit. A home visit that resulted in an action plan, created in consultation with the senior, was the most preferred, but only if there were means by which the modifications, as necessary, could actually be made.

In some cases, seniors (or their caregivers/family members) are provided hazard checklists to conduct self-assessments of the home. Panelists thought this approach could be somewhat effective if the senior/caregiver/family also received a list of available resources to help make necessary modifications. Resources would need to include not only where to find funding (i.e., grants, loans), but also trusted contractor referrals as available.

In one panelist's program, which includes a home visit and assessment, an OT coordinates with other team members to assess and execute necessary modifications. The OT Coordinator meets with the senior (and family members as available) to identify potential home hazards, and outline various actions and recommendations to help improve home safety and reduce fall risks. The Coordinator helps evaluate the costs of various suggested modifications and works with the senior to prioritize the list (i.e., determine which modifications are essential). The Coordinator then works with partner organizations who provide the home modifications. Several panelists believed that an assessment of this type, which involves more than simple recommendations, is more palatable to seniors and their caregivers.

When a senior does not own their home, panelists mentioned that some seniors might resist assessments that recommend changes to the rental property because they fear eviction if the modifications are requested. While this may be a valid concern in private rental properties, federally funded housing is required to make reasonable accommodations to help seniors remain in their home.

All of the panelists conducting home assessments and providing assistance with home modifications cited cost as a major barrier. While some panelists were aware of programs in their state/community that provided funding for senior modifications and remodeling to allow seniors to age-in-place (some panelist's had such opportunities embedded in their programs), few seemed well-versed or knowledgeable about alternative funding options for senior home remodeling or modifications. It was mentioned that some jurisdictions provide grants and/or low interest loans for such modifications, but these options are not widely available, which means seniors must pay out of pocket. At least one panelist indicated that home assessments that include recommended modifications beyond simple grab bars or removal/moving of hazardous items should not be conducted unless there are resources available and follow-up with the senior to help complete the modifications (i.e., the recommended safety modifications are achievable).

Home assessment and modification funding programs discussed by panelists included:

- State Tax Credits for senior home modifications, which are available in a few states such as Virginia. However, as a tax credit, the senior has to have upfront cash to make the modification(s) and is reimbursed via a credit on their taxes.
- County/state funding for local nonprofits to assist homeowners with safety modifications, but funds are generally limited.

- State Medicaid programs that provide funding to help low-income seniors make necessary modifications to avoid moving to a nursing home. The example cited was the Rhode Island Medicaid Home Stabilization Funds, which help seniors and disabled individuals cover home modification costs to enable them to remain living in the community.
- Home safety assessments done in line with an occupational therapist assessment, which allow a senior to utilize Medicare Advantage Plan funds (if they have subscribed to the Advantage Plan). The panelist that mentioned this funding opportunity was not sure it was always an allowable expenditure, and thought it was based on what the private insurer offers (the panelist thought costs related to OTs conducting home assessments could be covered by Medicare).
- A public health agency in one New York county purchases items such as grab bars and rails in bulk because they believe they should be “standard” in senior homes. The items are offered either free or at reduced cost to seniors, senior care givers, and/or community organizations that provide assistance with home modifications. This provides for an economies of scale that reduces the cost of items that otherwise might be too expensive for low-income seniors. (Note: The items are made available to any senior regardless of income.)
- Some states provide Medicaid waivers, which can be used for home modifications; but the waivers are very state specific and often have limited availability.

Panelists were also asked about using the Medicaid "Money Follows the Person" program or long-term insurance for home modifications to help a senior to return to the community, but none were personally familiar with how this program worked or aware of any insurance plans that provided funds for home modifications. However, several thought that if these programs could assist with modifications, it could be beneficial as they would reduce costs related to seniors having to move into nursing care facilities.

### ***Multiple Drug/Medication Interactions***

Panelists, asked about the impact of multiple drug and/or medication interactions on senior falls, indicated there are little to no standards of practice or protocols to ensure coordination of prescriptions for seniors in community-based settings. One panelist indicated interaction of different types of drugs is one of the top three causes of senior falls in their community. There is hope that new electronic records required under the ACA will help address some of this issue. In the meantime, that specific community is working to address the issues by having Community Health Workers (CHWs) review medications with seniors when they conduct home assessments.

One panelist noted that some communities have hospital discharge procedures (after a fall-related injury), which call for a review of medications, but there is little or no effort to coordinate future prescriptions (i.e., once the patient has left the hospital). Another panelist noted it is easier to coordinate medications in nursing care facilities because there is often a pharmacist consultant who reviews a resident's "cocktail" of prescription drugs to flag potential negative interactions.

Several panelists indicated that seniors themselves need to take a larger role in paying attention to the medications they are prescribed. It was suggested seniors (or their caregivers) need to provide a list of all their medications to their primary care physician and any specialists, and ask that the doctors consult the list before prescribing new medications or making changes to current prescriptions. As noted by one panelist, because seniors tend to go to several different doctors, it is difficult for one physician to keep track of what has been prescribed by another.

Additionally, while it was suggested that a pharmacist could be an alternative gatekeeper, some panelists stated that seniors do not always use the same pharmacy to fill their prescriptions. For example, it is not uncommon for a senior to receive some medications from the VA because they are less expensive, while other prescriptions are filled at other pharmacies. Just as one doctor may not know what others are prescribing for the same person, pharmacists do not know what prescriptions are being filled elsewhere.

Although not widely available, a few panelists referenced models such as the Medicaid-sponsored Program of All-Inclusive Care for the Elderly (PACE) or Support And Services at Home (SASH) in Vermont, which often help coordinate actions taken by seniors' primary care physicians and other healthcare providers to identify potential interactions between prescribed drugs.

### ***Balance/Strength Training***

No panelist was aware of any standard of care that automatically enrolled seniors, who were at risk of a fall or had suffered a fall, into a balance or strength intervention program such as Tai Chi or Matter of Balance. While some communities may try to coordinate efforts, one panelist noted that most healthcare professionals do not have the means to track or directly link a person at risk to services offered by another agency or the agency on aging (i.e., the group that often provides fall prevention interventions).

Several panelists observed that even when communities offer several different types of falls programs/interventions, it can be difficult to engage the seniors because, notwithstanding having had a fall, seniors may not be convinced they need the service.

Other barriers to fall prevention interventions mentioned by panelists included cultural issues. One referenced example was that the type of interventions (e.g., balance/physical activities) provided in a community had to be appropriate for member of that particular community. Tai Chi, which is highly regarded by several fall prevention studies, works well in many communities, especially those with a high percentage of Asian seniors, but it may not be received well in small or rural communities because it seems "foreign." In those cases, panelists thought that something considered more "home-grown" or familiar might be better received. However, these may not be considered "evidence-based" and/or eligible to receive funding. Similarly, interventions that seem to work in some small or rural communities may not be well received in a more metropolitan area.

### ***Technology***

One panelist discussed work being done by Design and Technology for Healthy Aging (DATHA), a Georgia Tech collaborative that meets monthly to look at the interaction between aging, the home environment, and technology. DATHA is currently working on several innovative ideas that will allow for detection of falls, improvements to universal design measures, ability to communicate with physicians without going to their office, and other options.

A few panelists noted that technology to improve the ability for seniors to remain in their homes, while still having access to caregivers and EMS, is improving. However, most technology requires some level of Internet connectivity, which not all seniors have. To address the Internet issue, one panelist discussed learning more about a German monitoring system (the panelist was not sure if the system is already in use or still in testing stage), which does not require Internet access, just a cellphone. It alerts caregivers/physicians to issues such as seniors falling out of bed, when a stove has been left on, and other potentially serious problems in the home.

### **Costs Related to Falls and Fall Prevention**

Nearly all of the panelists touched on loss of independence and disruption of daily life as an impact on or cost of senior falls, as well as the lost productivity family caregivers experienced. Some panelists also briefly mentioned costs related to offering interventions and implementing fall prevention programs. In some instances, panelists indicated it was difficult to fully understand costs related to senior falls due to lack of adequate data. Consequently, most cost discussions and assessments focused on direct medical costs, which tend to be more available.

For the most part, discussions focused on overall and general costs related to hospitalizations after a fall, and Medicare and Medicaid costs rather than individual and/or specific costs. One panelist indicated that hospitalization costs due to falls in his state alone were \$270 million in 2011, of which 84 percent was billed to Medicare and another 10 percent to Medicare Managed Care. Emergency department visits in that same state cost \$61 million, 80 percent of which was covered by Medicare and 11 percent by Medicare Managed Care.

Several panelists made the point that Medicare does not cover enough costs related to intervention programs and, if funds could be used to reduce and prevent falls, it would provide a significant cost savings for both states and the federal government.

Even if a falls prevention program did not actively involve home modifications, costs related to modifying a senior's home were mentioned several times. Panelists agreed that these costs generally fell on the individual, but some discussed how jurisdictions are looking at ways to work with and assist seniors with finding resources and funding to get modifications completed.

Although not quantified, several panelists mentioned that transportation costs for seniors to get to intervention programs offered outside the home (i.e., in local community centers) and/or to rehabilitation or therapist appointments are sometimes expensive, and beyond the reach of some seniors. If the travel time and/or cost of transportation are too high, seniors choose to stay home.

One panelist mentioned that the CDC recently published a "Journal of Safety Research" that looks at costs related to medical and lost work/productivity, but it did not address home modification costs.

Other cost issues and barriers mentioned by panelists included:

- Delivery of services related to fall prevention are too piecemeal.
- Costs are high because most activities for falls prevention tend to be reactive rather than preventive, and most people are not engaged in fall prevention strategies until *after* a fall has occurred. It was noted that once a senior falls, costs already begin to spiral out of control so that a prime way to reduce fall costs would be to get seniors engaged proactively.
- Implementation of some interventions themselves can be costly for an organization or state. One panelist stated that implementing many of the most successful interventions are very expensive because grants for fall prevention programs often require interventions be "evidence-based." While the panelist recognized the importance of evidence to support the effectiveness of an intervention, some programs require costly licensing and trainings, making implementation expensive in that state. The panelist also indicated that, although many communities and local nonprofit/faith-based

organizations would like to provide fall reduction and prevention interventions, the licensing and training costs were beyond their means.

- Additionally, a significant amount of time and research is needed to conduct the comparative studies often required to meet the standard of being an "evidence-based" program. The point was made that small programs rarely have the funding to conduct the necessary follow-up research.

### **Opportunities to Reduce and Prevent Senior Falls (Questions 65-77)**

Although several panelists were somewhat familiar with the idea of states and local jurisdictions providing grants and loans to help seniors modify their homes to "age in place," not all of them recognized the potential connection to falls prevention or knew how the programs worked.

Panelists also noted that while grants are beneficial, they are often oversubscribed and sustainable funding would be a key support issue (i.e., a one-time grant versus a budget line item makes a substantial difference in program sustainability). One panelist mentioned that low-interest revolving and/or forgivable loans could be a good option for consideration.

Although several panelists expressed interest in the idea of ongoing continuous care models, few programs currently offer them. Several panelists indicated they were trying to move their programs more in that direction.

- One panelist discussed getting seniors more physically active by building on work being done by other offices in their department of public health, which are focused on reducing obesity and encouraging leisure time activities that support exercise. The panelist emphasized the need to build communities that encourage seniors to get outside to enjoyable and easily accessible green space.
- Oregon is working on a pilot model (partnership between the University of Oregon's Department of Health and Science and its Gerontology department), which is attempting to work across several sectors to ensure continuity of care. The model provides the CDC STEADI toolkit to healthcare providers and clinical groups to help train them to conduct assessments and interventions. These professionals then become referral resources for physicians participating in the pilot program.

A few panelists indicated that the most successful interventions are included in clinical workflow and built into the healthcare system. This allows them to be more sustainable without needing to rely on volunteers or external aging agencies to keep the programs running. It was also suggested that interventions that promote social interaction between seniors are also important because they encourage seniors to get and stay involved.

### **Policies Related to Reducing and Preventing Senior Falls (Questions 78-84)**

One of the biggest problems panelists identified with current falls prevention policies and seniors is that there is no dedicated funding stream or significant collaboration between federal agencies. Several agencies have their own injury and falls prevention programs, but there is no lead agency that coordinates programs and actions administered in all of them. Several panelists thought there needed to be a better group of agencies or an interagency council on aging that had "teeth" to make changes to the way current programs are managed and administered.

Panelists would like to see policies that promote more coordinated/interagency efforts around senior care in general and fall prevention as one element of that care. Several experts discussed how policies are siloed in the same way that agencies are, and that various aspects of active living should be

entwined. For example, many public health and housing actions and costs impact each discipline and federal (and local) policies could be designed to better integrate their budgets (without reducing either budget).

Several panelists also suggested that assessments related to fall prevention could and should be broadly embedded in what agencies are already doing in the communities. For example, one panelist mentioned that their state environmental health department assesses a range of community issues and their assessment process could easily be expanded to include senior fall risk assessments. Others talked about the need for an entire "systems" change rather than interventions or programs designed to address one issue (e.g., falls) in isolation from others (e.g., housing, active living, healthcare).

Numerous panelists indicated that current policies on reimbursements for different senior services and care often inhibit their ability to provide a broad range of effective falls prevention programs and services. Reimbursement policies may be very specific about who is assessed and at what point, and then actions or interventions may only occur if prescribed to meet a particular issue.

Since certification programs seem to have been growing in recent years, panelists were asked about the need to create such types of programs to certify individuals conducting fall risk and home assessments. Few panelists want policies that mandate certifications/credentials beyond what already exists (i.e., nurse practitioners, community health workers, social workers) because they worry it could curtail work already in progress. Panelists expressed interest in helping expand the workforce and thought a need for certification could have the opposite effect. However, in areas already requiring certification, several panelists indicated an interest in having a more uniform or standard process for certification so that a certification in one state met the same requirements as one in another (for example, ensuring that a certified Community Health Worker in Colorado underwent the same training as one in Massachusetts). Experts also expressed concern about how certification programs would be vetted (and by whom) and who would be responsible for the certifications process.

Numerous panelists indicated a need for a robust, national awareness campaign aimed at the preventability of falls that perhaps did not actually focus on just "falls" but on overall senior wellness and healthy community living. Somewhat in line with these comments, several panelists talked about the need to reach younger adults (i.e., younger than age 65) to help educate them about how to avoid falls, become more physically active, and basically be more proactive for fall risks earlier in life.

Some of the successful state/local policies and programs identified by panelists included:

- Programs training first responders and social services agency representatives to identify seniors at risk for falls and conduct home assessments. Since these workers are already in the community and often know and/or have a relationship with seniors, it is an effective method to reach and help more community-based seniors.
- Coordinated care models that manage care and delivery of services to improve seniors' quality of care and enable them to remain in the community. Often these models coordinate efforts between a variety of service agencies including public health, aging, and housing. Models mentioned, which have shown costs savings over traditional administration of support services provided separately, include:
  - **SASH** (Support And Services at Home): SASH provides seniors comprehensive service management of their housing, healthcare, and social service needs. Coordinators and Wellness Nurses help seniors navigate the healthcare system to ensure they receive coordinated medical

care and the assistance they need to remain in their homes as long as possible. SASH partners with a variety of organizations across Vermont, including local area agencies on aging, mental health agencies, local hospitals, and the Visiting Nurse Association to provide care management and preventive services. As a population based system, SASH offers its service and support to seniors regardless of payer. The model is integrated with Vermont's Blueprint for Health and is currently funded through a Medicare demonstration.

- **CAPABLE** (Community Aging in Place—Advancing Better Living for Elders): CAPABLE was launched by the Johns Hopkins School of Nursing to help functionally impaired low-income seniors address their health issues while living in a safe home environment. An interdisciplinary team, composed of a community health worker, registered nurse (RN), occupational therapist (OT), and a housing repair specialist from a local nonprofit work with local seniors to address their physical and medical issues and the functionality of their home environment. After an onsite fall risk and home assessment completed by the OT with the senior, the team works with the resident to prioritize modifications, and then coordinates the work with the local community development nonprofit (availability of funding may impact the range of available modifications).
- **PACE** (Program of All-Inclusive Care for the Elderly): PACE is a Medicaid-sponsored program that provides coordinated care through an interdisciplinary team of health professionals. Financing for the program is capped, which allows providers to deliver all services participants need rather than only those reimbursable under Medicare and Medicaid fee-for-service plans. Established as a provider in the Medicare program and as a state option under Medicaid, it is available in relatively few states/communities.

A few panelists suggested that HUD/federal government should consider making the best models of coordinated senior care part of the public health surveillance system (similar to vaccines) to track the impact of the models on health and healthcare costs.

Additional policies suggested by panelists include:

- Standardized building codes to ensure homes are safe for all ages, including seniors. One panelist suggested that codes did not have to be onerous and states/localities could maintain their own if they met a higher standard. The panelist noted that nationally standard codes with basic safety measures could reduce fall risks and ensure community-based seniors' homes were safe regardless of where they lived.
- Easy low-interest and no-interest government loans to support senior home modifications.
- Integration of local HUD offices and state/local housing agencies with state falls prevention coalitions to help each understand and better coordinate services for seniors.
- Encouragement of models of care that promote patient-driven programs and interventions that address both housing and health. As an example, one panelist suggested Medicare and Annual Wellness appointments should include efforts such as home hazard checklists that address and improve home health and fall risk hazards.
- Integration of visitability and Universal Design elements in all federally or state subsidized housing, regardless of the housing's target audience (i.e., even if the housing is not dedicated to seniors), to ensure housing can readily adapted to meet growing/changing demographics. Universal design should be embedded in housing trust fund programs and/or include tax or other incentives for private developers.

- Resident service coordinators in HUD housing should be trained in various senior fall risk assessments and evidence-based interventions.
- A major education and awareness campaign to help state and local housing authorities understand what is, and what will be, needed to address the aging population.
- Increased use of Medicaid waivers and managed care plans for assessments and interventions, as well as for seniors' home modifications.
- Service and coordination demonstrations in senior housing to show how the incidence of falls can be tracked in community settings and the accumulative healthcare savings provided through coordinated care and services. Models such as CAPABLE and SASH could be used as examples of supportive services and housing for seniors.
- Investment of funds in an Age-Friendly movement, which creates certifications, similar to LEED, for housing built to "senior" standards.
- Better tracking of healthcare savings and other benefits (both direct to the senior and societal) resulting from investment in coordinated care and /or home modifications that help seniors remain in their home and community.

#### ***Panelists' Policy "Wish List"***

Panelists were asked to identify three to five policy or programmatic changes they could recommend to improve senior care and falls prevention. The following is a "laundry list" of panelists' responses:

- Coordinated policies across agencies with an identified "Lead" agency. One panelist suggested that public health, housing, transportation, and other agencies need to be at the table but one agency needs to lead and coordinate policy and funding. The panelist further noted that the lead agency did not necessarily need to be the public health agency.
- Better integration of service delivery policies (i.e., allow one entity or agency to go into a senior's home and perform or coordinate everything, from health, home, and fire safety assessment to necessary home modifications). A couple of panelists referred to it as a "no wrong door" model, which improves utilization of people and services already in place, and allows for the coordination and expansion of the workforce, as necessary, to meet the growing senior population.
- An expansion in Medicare coverage to include home modifications and a broader range of practices that can help seniors age-in-place/stay at home longer.
- Universal design required in all HUD/state funded housing.
- More support for community-based models that train and connect housing and community professionals with public health and medical professionals (and vice versa).
- More robust education, awareness, and outreach to seniors and their families about the importance of the home environment. One panelist suggested that, similar to the lead-safe pamphlets geared toward children, Home Safety pamphlets could be developed for seniors (or be non-age specific to remove potential elderly stigma).
- Creation of a dedicated funding stream to support aging-in-place, senior safety at home, continuous care models.
- Increased funding to CDC and other agencies, as long as they coordinate efforts, for fall prevention.
- Improved fall prevention and home safety outreach to underserved and low-income communities.
- More support for evidence-based programs, including long-term home assessments and modifications.

- Elimination of "fall prevention programs/interventions" and embed fall prevention into other, existing programs and models, which may not directly target the elderly, but includes them in the model's continuum of care.
- Systems that create non-traditional "medical" providers (i.e., offers on-the-ground training and reasonable wages to non-degreed individuals to support work and provision of care in the community, which could be equivalent to some type of community health certification).
- Ensure that Medicare promotes preventive health measures from day one, and provides full assessment of not only the individual, but also their home environment.
- Across the board, increased funding. State and local grants from CDC ended because there was no more money from Congress. The ripple effect that starts at the federal level impacts every local program and effort.
- Create more transportation options for home-bound seniors.
- Better and more coordinated reimbursements for various senior services and care.
- Create a principle of "healthy homes" as a prescription, where a physician can prescribe use of technology/safety devices in the home that are reimbursable.
- Create a universal "Community Health Worker" credential so that the credential in Vermont provides the same training as the credential in Texas or Oregon.
- Require both Medicaid *and* Medicare to provide funding/reimbursement for assessments, training with assistive devices, and home modifications.
- Expand or extend funding from programs such as the Community Development Block Grants (CDBG), Older Americans Act, and Americans with Disabilities (ADA) to cover modifications (e.g., ramps, chair slides) that allow seniors to age in place. Funding would drastically reduce the need for funding for nursing home facilities.
- Market and brand senior fall risk and home safety measures at the national level to raise awareness and create a repository of information that helps seniors (or their families/caregivers) find resources in their own community.
- Coordinate all funding between all agencies that provide services to seniors. Stop direct, specific funding to healthcare, public health, aging administration, housing, and other agencies that limits how funds can be spent to ensure that all senior funding coordinates ongoing models of continuous care.
- Ensure that public health and healthcare professionals understand housing issues related to senior community-based settings, and vice versa.
- Educate agencies, healthcare professionals and others about the role of the Health Insurance Portability and Accountability Act (HIPAA), specifying what it does and does not restrict, to improve models of coordinated care for seniors.
- Create capitated healthcare payment schedules/arrangements to allow providers to spend as much time as needed with clients/patients.
- Ensure hospital and rehabilitation center discharge procedures address the senior's home environment prior to discharge.
- Make the role of the physical environment a more prominent part of fall prevention policies.
- Look at how HUD can support "Age-Friendly" communities and Universal Design in both new design and development as well as in rehab projects (i.e., upgrades of existing HUD properties).

### ***Drawbacks of Current Policies***

- Lack of coordination between agencies. There needs to be at least one agency that takes the lead – does not have to be public health (although they must be at the table).
- No dedicated funding stream.
- Stigma of "senior," "elderly," or "aged." While everyone is moving in that direction, policies and programs need to build awareness and change the perception that falls are part of the "natural course of aging."
- Policies and agencies are too siloed, and there is little to no requirement that agencies ensure policies promoted by one are supporting or endorsed by another.
- Housing and healthcare costs and programs for the same population are not intertwined.
- Competing demands (and agencies); everyone is fighting for the same, limited dollars.

### **Obstacles to Implementing Effective Senior Falls Prevention Policies and Programs (Questions 85-94)**

While several panelists indicated they were surprised by how many communities were implementing diverse, successful fall prevention programs, other panelists provided several reasons as to why seemingly effective fall prevention programs are not gaining widespread adoption/traction:

- The requirement under most grants that interventions be "evidence-based" puts a huge burden on local communities from both a cost and staffing perspective. One panelist suggested that an approach similar to that taken by OSHA might be more appropriate: identify a key set of eight to 10 critical elements that must be included in a program to qualify for grants. This would provide more flexibility to allow a community to craft interventions/programs to better meet their suit their community residents and needs.
- Injury and fall prevention programs tend to be low on the food chain. Often there is no lead at the state or federal level, and/or there is only one person coordinating statewide efforts.
- Lack of workforce: not enough qualified/certified staff to provide program services.
- Available funds and grants often have to meet a variety of commitments/ restrictions.
- Understanding and getting a return on investment (ROI) for the program(s): those that see the benefit are not always the ones footing the cost.
- Not enough community support and engagement. Seniors are not signing up to participate because they do not recognize the importance or need for themselves. As one panelist explained, aging is a slow process and many seniors (and their families) do not see how some of these interventions, programs or models impact them until after a fall occurs, and then it is often too late.
- The programs are not well marketed and seniors are not recruited in the right fashion. Seniors do not want to see themselves as needing a program for the elderly. A few panelists suggested that developing peer champions in the senior community might help promote programs.
- Transportation is a problem. Even if a program is centrally located, it is often difficult for a senior to get to it.
- Several panelists felt that, although they might be effective, many programs are too limited or focused on one aspect of the overall senior health issue (i.e., simply on falls) and are reactive versus preventive.
- Interventions/programs are not located in the communities with the most need.

- No organization to administer intervention programs.
- The number one obstacle noted by nearly every panelist was the lack of dedicated, coordinated funding to support senior care and services.
- Another major obstacle noted by several panelists was competing priorities: while seniors falling is a huge issue, there are numerous other health issues that must take priority. With limited resources, falls prevention often is put on the back burner.
- Policies related to senior care and living are made in and by siloed agencies without regard for the impact and interconnection policies related to housing, health care, transportation and other community development and public health issues have on each other.
- Although not broadly cited as an obstacle, building codes and building conditions were discussed (Note: This could have been because of the focus on "fall prevention" and the disconnect that seems to be somewhat prevalent on how building and community conditions and design impact seniors' ability to navigate them).

Other barriers to implementing fall prevention programs cited by panelists included:

- Behavior – even if a falls prevention program is in place, it will not be effective if seniors do not participate and do the work/physical activity necessary to maintain their physical condition.
- Lack of coordination between various local, state and federal agencies.

Some of the innovative ways panelists have overcome obstacles include:

- Panelists tried to help partners determine how they could cover costs associated with fall prevention interventions.
- Fall prevention interventions are embedded in other programs.
- Creating State and local coalitions and broader partnerships.
- Having seniors pay for some services – even only a nominal fee – to give the service more "value."
- One panelist discussed how their program helped the senior take control over their fall risk issues. Because seniors don't necessarily want someone else "telling" them how to fix/change their home, home hazards and fall risk assessments were evaluated directly with the senior. They then made the decisions about which changes received priority based on their own level of risk and comfort with change. In addition to helping the seniors feel as though they are being heard, the exchanges tended to build a rapport and trust with the CHW/social worker.
- Working with first responders, such as EMS, police and fire department staff:
  - When EMS was continually being called for "lift assistance," the communities created an assessment tool that EMS staff could use to assess fall risks of seniors and their home while they were at the home. They also developed a list of resources where seniors could attend classes and/or meet with community health workers about improving balance and physical well-being.
  - When the fire department is called to address cooking/kitchen fires, department staff schedule a home falls risk assessment to help the senior understand some of the changes they could make to improve home safety.
  - The Police Department in one small community is committed to getting seniors to intervention classes and doctor/therapist appointments. Seniors call the department to coordinate their transportation.
- Create a Wellness coordinator for senior housing complexes who coordinates onsite (as feasible) intervention programs (e.g., nutrition, balance) and works with local public health and housing departments.

- Ensure that every senior program embeds fall prevention interventions and that "fall prevention" programs are not seen as just programs to reduce and prevent falls; take a more multifactorial approach to falls because they aren't caused by one factor.

### ***General Comments: The Future of Fall Prevention***

Nearly every panelist stated that they would like to see a more holistic approach taken with falls prevention and senior care in general. One panelist indicated that is why their local coalition changed its name from the *Falls Prevention Coalition* to *Safe Aging Coalition*. Another panelist mentioned the need to take a broader approach to how injuries and falls are addressed. Other panelists talked about looking forward to better integration of services and coordination at the community level so organizations and agencies are less siloed.

The Panel seemed to be somewhat divided on the attention paid to falls prevention and senior care in general. On the one hand, some panelists believe there is a huge momentum growing around the need for falls prevention programs and it is becoming higher profile for various federal agencies. On the other hand, several panelists think falls prevention is still too low on the totem pole and they hope the future will find it elevated by the public and in the public health sector.

A few panelists think HUD and other federal agencies should be working more closely with the private sector, looking at ways to build/create more active communities and smart growth into community development activities, and include senior housing as part of new urbanism efforts.

Panelists hope that more preventative actions will be taken, by both seniors and public health professionals, *before* falls occur and that the field becomes more proactive versus reactive as to how they address the potential of falls.

### **Senior Fall Prevention Policy Toolkit (Questions 95-96)**

Several panelists indicated that a policy toolkit should draw from the toolkit developed by the National Council on Aging (NCOA) with emphasis on housing and community development.

Many panelists thought the toolkit should include information on policies and building codes that support housing and communities for all ages, and focus on how housing and good community design can promote activities (e.g., walking, getting outdoors, being more active and social in general, reducing social isolation) that are essentially falls prevention interventions without calling them "falls prevention."

Because of the lack of general knowledge/awareness of funding for senior modifications, several panelist thought the toolkit should include key information about funding resources for these types of activities as well as provide a clear understanding of where Medicare and Medicaid can and cannot assist. Along these same lines, there should be a clearer idea of where the ACA impacts policies related to seniors in community-based settings.

A few panelists thought that a policy toolkit should include tips for community organizations, seniors, and caregivers and families about how to advocate for funding and programs at the legislative level. Who do they write to? What types of facts and figures should they include? How can they tell their story?

Several panelists, in discussing the lack of funding, indicated that falls prevention should be embedded in bigger collaborative effort of agencies. While most panelists were referring to federal agencies, they also indicated that outlining the type of partnerships needed for a broader senior living program/collaborative should be included in the toolkit.

Additionally, although several panelists discussed falls prevention collaboratives currently in place, they mentioned a couple of potential problems with the current structure:

- 1) People coordinating state falls prevention collaboratives often manage them as one part of their job, but running and coordinating such a collaboration is a full job unto itself.
- 2) Most collaboratives include the "usual" suspects/partners, which limits their perspectives and often their funding. To date, there does not seem to be much of an effort to go beyond the choir or broaden partnerships within existing collaboratives, in some cases simply because people do not know individuals from other disciplines.



# Overcoming Obstacles to Effective Senior Falls Prevention and Coordinated Care

*A Toolkit for Program Success*

March 2017

# Senior Falls Prevention and Coordinated Care

## **Abstract:**

This Toolkit is intended for executives, managers, designers, program staff, outreach staff, consultants, and contractors dealing with, or considering creating or updating, policies and programs to reduce the frequency and/or severity of falls among seniors. These policies and programs may be governmental, non-governmental, for-profit, or a combination of these, as may be the partners they seek to provide support to the programs. Reflecting consultations with the professionals acknowledged below, this Toolkit identifies common obstacles to the development and implementation of effective senior falls prevention and coordinated care policies and programs, annotated lists of resources that may help with overcoming the obstacles, and descriptions of how to confront the obstacles and use the resources to make the programs effective and achieve success.

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# Senior Falls Prevention and Coordinated Care

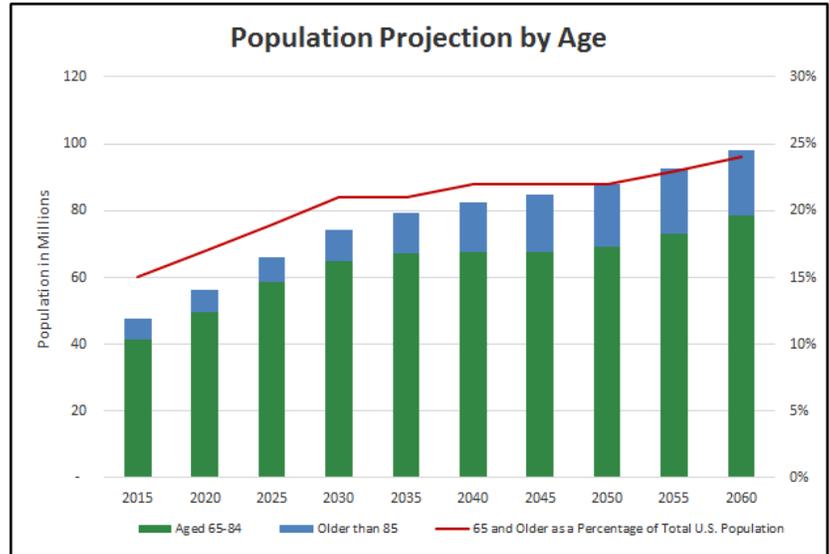
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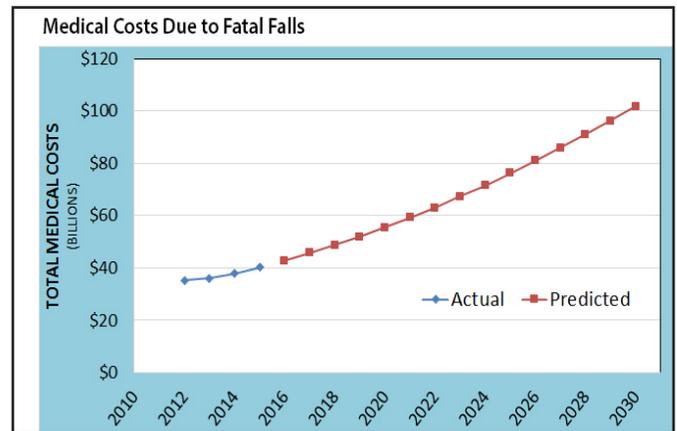
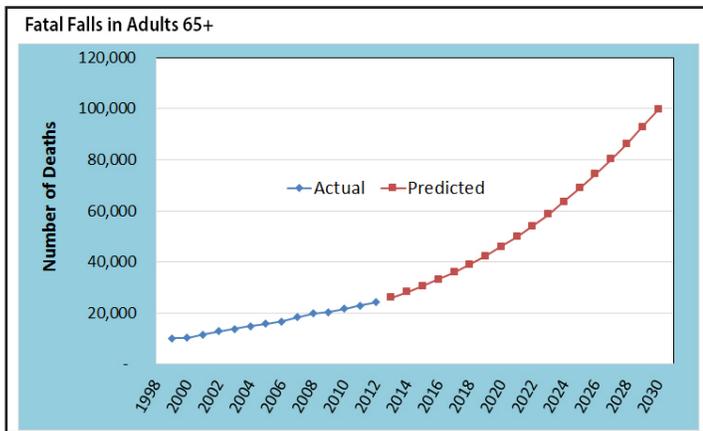
# Senior Falls Prevention and Coordinated Care

## I. Introduction: Our Communities are Aging

Every day in the U.S., 10,000 people turn 65 years old. Within the next fifteen years, one in five people will be over the age of 65 and half of that cohort will be over 80 years old. The Centers for Disease Control and Prevention (CDC) reports that one in three people age 65 years or older fall annually.<sup>1</sup> Although a majority of these falls may only cause a minor injury such as a small cut or bruise, at least 10 percent will result in a hip fracture, traumatic brain injury, or other life-altering injury. A fall can have a significant impact on a senior's ability to remain in their home and live independently. More than 40 percent of seniors hospitalized after a serious fall injury are unable to return to living on their own.<sup>2</sup> Falls also have an enormous impact on our economy. In 2015, the annual costs of senior falls were nearly \$32 billion; by 2020, it is expected to grow to more than \$67 billion.<sup>3</sup> Although people tend to become more susceptible to falling as they age, falls are not a preordained part of the aging process. Fall risks can often be mitigated by exercise and physical activity, and home modifications, among a range of measures.



Source: U.S. Census Bureau, Population Division. Table 9. Projections of the Population by Sex and Age for the United States: 2015 to 2060 (NP2014-T9). Release Date: December 2014  
Adapted from Fall 2013 HUD Evidence Matters



Source: Adapted from Houry et al. 2016 / The CDC Injury Centers Response to the Growing Public Health Problem of Falls Among Older Adults

<sup>1</sup> Important Facts about Falls. [www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html](http://www.cdc.gov/homeandrecreationalafety/falls/adultfalls.html).

<sup>2</sup> Preventing Falls: A Guide to Implementing Effective Community-Based Fall Prevention Programs. [www.cdc.gov/homeandrecreationalafety/falls/community\\_preventfalls.html](http://www.cdc.gov/homeandrecreationalafety/falls/community_preventfalls.html)

<sup>3</sup> Costs of Falls Among Older Adults. [www.cdc.gov/homeandrecreationalafety/falls/fallcost.html](http://www.cdc.gov/homeandrecreationalafety/falls/fallcost.html)

# Senior Falls Prevention and Coordinated Care

## Obstacles to Senior Falls Prevention and Coordinated Care

The National Institutes of Health (NIH) reports that more than half of senior falls occur at home,<sup>4</sup> yet few homes have the features necessary to help older adults safely navigate in them.<sup>5</sup> Additionally, at some point, most seniors will require support at various levels of coordinated care to remain in their homes, ranging from assistance with common activities ranging from transportation and grocery shopping to preparing meals and bathing, and from house cleaning to ensuring medications are taken on schedule.



Few seniors, especially those who are moderate- to low-income, have any type of long-term care (LTC) insurance to help cover their cost of care as they age or to help offset the cost of home modifications that could help them remain safe in their own homes. In 2013, nine percent of older adults were living below the poverty level and six percent more were considered “near-poor” (i.e., their income was between the poverty level and 125 percent of that level). Overall, most seniors devote a significant amount of their income and savings to housing and healthcare costs. In 2013, seniors spent more than 12 percent of their total household expenditures on healthcare and almost half of senior households spent more than a quarter of their income on housing costs.<sup>6</sup>

Clinical screenings and home assessments, interventions ranging from home modifications and repair to exercises that address senior gait and balance, and build strength, and coordinated care can help keep seniors healthier and safer at home. However, these types of interventions and models of care frequently face significant policy and implementation barriers, including:

- lack of coordinated care among community social service, housing, and health care providers;
- restrictive reimbursement policies that limit the ability to coordinate government funding;
- inadequate staff and training resources; and
- ability to reach their most important stakeholders: seniors.

## “No Place Like Home”: Overcoming Obstacles to Aging in Place

AARP reports that 87 percent of seniors expressed a strong preference for “aging in place” for as long as possible, by either remaining in their own home or living in an affordable home elsewhere within their community.<sup>7</sup> Aging in place generally provides easier access to friends and family, but it may also require home modifications and care beyond seniors’ economic means. Nonetheless, helping seniors age in place is much more



<sup>4</sup> NIH Senior Health, Falls and Older Adults. <https://nihseniorhealth.gov/falls/causesandriskfactors/01.html>

<sup>5</sup> U.S. Census Bureau, 2011 American Housing Survey. Accessibility/Safety Features in U.S. Homes

<sup>6</sup> A Profile of Older Americans: 2014. [www.aoa.acl.gov/aging\\_statistics/profile/2014/docs/2014-profile.pdf](http://www.aoa.acl.gov/aging_statistics/profile/2014/docs/2014-profile.pdf)

<sup>7</sup> [www.aarp.org/livable-communities/info-2014/livable-communities-facts-and-figures.html](http://www.aarp.org/livable-communities/info-2014/livable-communities-facts-and-figures.html)

# Senior Falls Prevention and Coordinated Care

cost effective than having them transition to life in a nursing home or assisted living facility. The cost of care for a community-dwelling senior is approximately one-fifth the cost of care in a nursing home.<sup>8</sup>

Creating partnerships to coordinate care between agencies on aging, housing, community development, and public health can help ensure that seniors receive needed preventive services to remain independent and safe in their homes

Policymakers and planners can use regulatory and legislative policies to promote age-friendly communities where seniors have a variety of affordable housing options; safe street and sidewalk conditions; and access to transportation to get them to the places and daily services they need. The U.S. Department of Housing and Urban Development's (HUD) [Fall 2013 edition of Evidence Matters](#) offers several ideas for how home and community environments can be built or retrofitted to help create age-friendly communities that allow seniors to age in place. [AARP's Network of Age-Friendly Communities](#) provides additional resources as well as a practice of care network to help communities create or maintain supportive resources for seniors as they age.

## How to Use this Toolkit

HUD's Office of Lead Hazard Control and Healthy Homes (OLHCHH) created this Toolkit to help bridge the gap between providers of housing and community development services and providers of public health and aging services. It is designed to help these stakeholders – and others that may be able to contribute to the falls prevention effort – effectively work together to find ways to overcome policy and program barriers to creating effective senior falls prevention and coordinated care programs. Materials included in the Toolkit reflect input from HUD's expert panel on senior falls prevention as well as information obtained from a comprehensive literature review.

This first section of the Toolkit provides key information about why we should be concerned with the current state of our aging communities and the threats posed to the health and wellbeing of our seniors. It also considers the broader economic impact if we do not take action to address this issue. The second section describes the utility of a clear program mission statement. The third section provides guidance on finding and building the right types of partnerships and stakeholder groups to achieve the program's goals. The fourth section focuses on how to make the case for the program's project(s) to potential funders and identifies potential funding sources. The fifth section addresses how to ensure the sustainability of the program through evaluation and outreach.



Senior Falls Prevention and Coordinated Care Toolkit

<sup>8</sup> [www.huduser.gov/portal/periodicals/em/fall13/highlight1.html#title](http://www.huduser.gov/portal/periodicals/em/fall13/highlight1.html#title)

# Senior Falls Prevention and Coordinated Care

## II. Mission: Overcoming Obstacles to Change

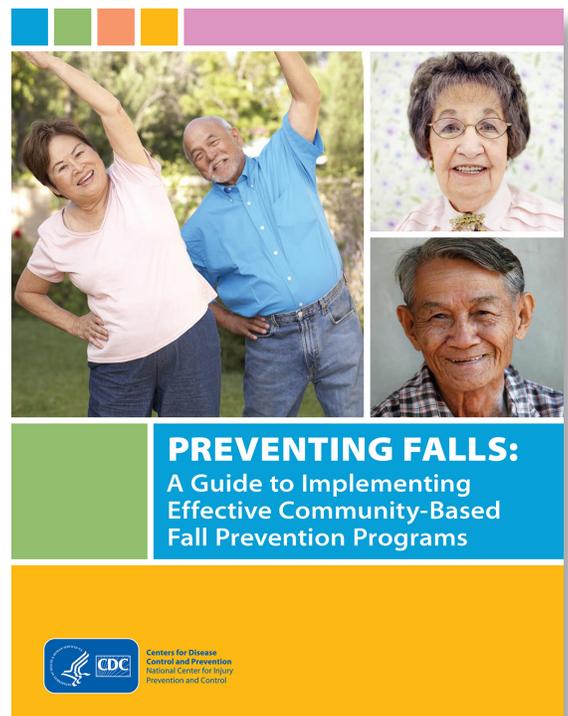
Change typically happens when people and organizations with shared visions agree to work together, or partner, to make that vision a reality. Partnerships can take many forms, but before an organization can begin building a partnership that embraces a new approach for senior falls prevention and coordinated care, it will need to construct a strong program mission statement that captures the overall goals and intended outcomes of the partnership. This statement should encompass the actions and goals envisioned for the partnership and serve as the starting point to recruit partners.

In creating a program mission statement, people should think about the achievements of existing partnerships and consider what successes of those models should be replicated or improved upon, and what weaknesses in them can be overcome. When starting from scratch, consider what a successful program or policy would look like to your organizations and the seniors in your community. Identify the issue you are attempting to tackle (i.e., your cause), the actions needed to address the issue, and what change or impact you hope the partnership or collaborative will achieve.

For example, the [Step-by-Step Exercise to Create a Mission Statement](#), created by Nonprofit Hub,<sup>9</sup> can help you organize your concepts and goals to develop a strong program mission statement.

Please note, in regard to developing your program mission statement, selecting partners, and determining program goals and implementation approaches, that this Toolkit is not intended to provide guidance on selecting, creating or implementing a specific type of senior falls prevention intervention or coordinated care model, because many other organizations have already undertaken that task. For guidance on program development and implementation, see, for example:

- Centers for Disease Control and Prevention (CDC). [Preventing Falls: A Guide to Implementing Effective Community-Based Fall Prevention Programs](#).
- Centers for Medicare and Medicaid Services (CMS). [Integrated Care Resource Center](#).
- National Council on Aging (NCOA). [Falls Prevention](#).



<sup>9</sup> Nonprofit Hub is an online educational tool that provides nonprofits an array of resources to improve their organizations and communities. The Exercise document mentioned above is useful for program missions as well as the organizational missions for which it is written. <http://nonprofitHub.org/>

# Senior Falls Prevention and Coordinated Care

For evaluation information and guidance about using coordinated care models, see, for example:

- [The Commonwealth Fund](#) website, especially its [Coordinated Care Models](#) webpage.
- [Safety-Net Providers In Some US Communities Have Increasingly Embraced Coordinated Care Models](#), a report by the [Center for Studying Health System Change \(HSC\)](#) evaluating coordinated care models.<sup>10</sup>



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## Models of Care for High-Need, High-Cost Patients: An Evidence Synthesis

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### Toplines

- Successful models of care for complex patients share attributes like targeting the right patients
- Few new models of care have been widely adopted due to barriers like fee-for-service reimbursement

### Abstract

This brief analyzes experts' reviews of evidence about care models designed to improve outcomes and reduce costs for patients with complex needs. It finds that successful models have several common attributes: targeting patients likely to benefit from the intervention; comprehensively assessing patients' risks and needs; relying on evidence-based care planning and patient monitoring; promoting patient and family engagement in self-care; coordinating care and communication among patients and providers; facilitating transitions from the hospital and referrals to community resources; and providing appropriate care in accordance with patients' preferences. Overall, the evidence of impact is modest and few of these models have been widely adopted in practice because of barriers, such as a lack of supportive financial incentives under fee-for-service reimbursement arrangements. Overcoming these challenges will be essential to achieving a higher-performing health care system for this patient population.

### INTRODUCTION

Patients who have complex health needs account for a disproportionate share of health care spending or may be at risk of incurring high spending in the near future.<sup>1</sup> These individuals typically suffer from multiple chronic health conditions and/or functional limitations.<sup>2</sup> Moreover, their health care needs may be exacerbated by unmet social needs.<sup>3</sup> They are often poorly served by current health care delivery and financing arrangements that fail to adequately coordinate care across different service providers and care settings.<sup>4</sup>

This brief describes research about clinical care models or care management programs implemented by health care provider organizations to improve outcomes and reduce costs for high-need, high-cost patients (see About This Study). Based on a review of literature that assesses the evidence on the impact and features of such care models or care management programs, this brief identifies common attributes of effective models and programs, as well as barriers to their uptake, to identify opportunities for improving health system performance. This

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people with multiple health problems—sometimes referred to as “high-need, high-cost” because of their intense use of medical care and behavioral health services—often need assistance with other things like housing, or everyday tasks like walking or taking medications, to lead full, productive lives. Research shows the most effective programs:



### RELATED INFOGRAPHICS



<sup>10</sup> 'Safety-Net Providers In Some US Communities Have Increasingly Embraced Coordinated Care Models.' Health Affairs 31:8 1698-1707. August 2012. Cunningham P, Felland F, and Stark L. Available at <http://content.healthaffairs.org/content/31/8/1698>. NOTE: The Center for Health Systems Change (HSC) merged with Mathematica Policy Research (MPR) and ceased operations as an independent organization.

# Senior Falls Prevention and Coordinated Care

## III. Building Partnerships to Overcome Obstacles

One of the keys to overcoming obstacles to effective senior falls prevention and coordinated care policies and programs are:

- Recognizing that your organization cannot do it alone; and
- Creating strong partnerships with organizations that share your vision. Partnering with other organizations prevents you from having to “re-invent the wheel” and often provides access and experience that your organization may not have.

Your program mission statement should define what type of partnership or collaborative you want to create. For example:

- Are you trying to build a team of service delivery partners to provide senior falls prevention interventions and coordinated care? Or
- Are you trying to build a collaborative that supports changes to legislative and regulatory policies to improve service delivery?

While not mutually exclusive, the structure of your partnership will vary based on what you want to accomplish.

It is important to understand that building a partnership does not happen overnight. While collaborating with other organizations can help achieve your goals, it also takes time, resources, and patience. Before you start recruiting partners, evaluate the resources, including staff and financial, and expertise your organization has to dedicate to the process. Also, determine if you need to seek additional funding to support your effort.

This may also be the time to consider if you can or should be joining someone else’s partnership instead of starting your own. You may find an opportunity to work with an existing partner or coalition that could use your organization’s expertise to expand its services or re-energize its efforts. If no promising partnership opportunities emerge, begin considering what benefits your organization offers potential partners, and what type of organizations you need to engage to successfully accomplish your shared goals.

A partnership or collaboration focused on helping seniors age in place might include people and organizations with expertise in public health, aging, housing, and community development. It also might include academics and universities that offer programs targeted to geriatric care. In some instances, it may require breaking down longstanding silos. Potential partners should bring access to various resources and funding you may not currently have, and include or have connections to decision-makers such as elected or appointed officials and fund funding organizations, and people who regularly influence decision-makers. Partnering with diverse organizations enables both your organization and theirs to contribute skills and expertise to the project’s overall objective from a range of perspectives.



# Senior Falls Prevention and Coordinated Care

It is important to consider reaching beyond your traditional partners when building a partnership. Affordable housing and community development corporations (CDCs) have been supporting housing and economic development and providing services to community residents since the 1960s. Many own and manage affordable senior housing complexes that offer resident services; some also provide services to seniors living in the surrounding community. Given their limited resources, CDCs are always interested in partnering with other organizations. If partnerships have not already been established, public health and agencies on aging should consider working with these local nonprofit housing providers to leverage available resources. A recent study on the 42 state Senior Falls Prevention Coalitions found that few listed affordable housing providers or CDCs as partners.<sup>11</sup>

## Recruiting Partners

As you build a list of potential partners and begin outreach efforts, you will need materials that outline what your partnership intends to accomplish. Consider drafting an overview that includes your mission statement, background on the issue you want to address, and how the proposed partnership would work to solve the problem.

The overview should include an overall description of the proposed project along with a description of each type of partner(s) needed to meet its goals. The overview should also provide an initial framework for how various partners would work together, what skills and services each offers the partnership, the potential resources they would bring, and a clear understanding of how each partner would complement others. As your program takes shape and you recruit partners, both your mission statement and proposed framework may change to reflect specific objectives that your partners want to achieve.



Your first contact with a potential partner should always be through a phone call or direct face-to-face meeting to introduce yourself and provide some basic background about your organization. This step is especially important if you are “cold calling” a potential partner, because people are often more apt to respond to a call or meeting request than an email from a stranger. It also improves your ability to express your enthusiasm for the program and create a good first impression, which can help foster the relationship. Before the initial call or meeting, drafting talking points based on the materials you have created will help you convey what the potential partner’s

<sup>11</sup> *State Fall Prevention Coalitions as Systems Change Agents: An Emphasis on Policy*. Schneider EC, Smith ML, Ory MG, Altpeter M, Beattie BL, Scheirer MA, Shubert TE. *Health Promotion and Practice*. 2016 Mar;17(2):244-53. <http://journals.sagepub.com/doi/full/10.1177/1524839915610317>.

# Senior Falls Prevention and Coordinated Care

role would be and why you think they are a good fit for the program. During the early phases of recruitment, there may be questions that you will not be able to answer. Keep a running list of them as you meet with potential partners. These questions will help you reconfigure the framework of the program as necessary and clarify your mission as you develop the case for engaging other organizations to become partners, and gaining support from funders.

[Housing and Health Care: Partners in Healthy Aging](#) may help you learn more about building partnerships between health and housing organizations. Produced by LeadingAge, a nonprofit membership organization representing disciplines across the aging services spectrum, it is a toolkit designed to help housing and healthcare partners learn how to work together on joint initiatives to improve the health, safety and wellbeing of low-income seniors.

## Partnership Agreements

Partnership agreements solidify each partner's commitment to the project. What those agreements look like and provide depend upon the type of partnership you are building. A partnership created to work on legislative and regulatory policy issues may simply require a memorandum of understanding (MOU) that details the commitment of each partner and what resources they bring to the effort. It may also include a non-compete funding provision and/or a requirement to



submit funding proposals jointly. Some of these same elements could be included in an agreement for a service delivery partnership, but a delivery of services agreement will require a more extensive business agreement that clearly outlines agreed-upon

services and financial issues. [Nonprofit Collaborations: The Structural Options](#) may help you understand the best option for your particular partnership.

Fostering partnerships among public health, housing, and aging entities can help set the stage to meet the challenges of our growing senior population. The list of potential partners identified here may help fill a gap in your delivery of services to seniors as well as help build support for improved policies and practices to reduce falls and coordinate senior care.

## Potential Partners

### Housing & Community

- [Community Action Partnership](#)
- [Enterprise Community Partners](#)
- [Habitat for Humanity®](#)
- [HUD Field Offices](#)
- [Local Initiatives Support Corporation \(LISC\)](#)
- [National Alliance of Community and Economic Development Associations \(NACEDA\)](#)
- [National Housing Conference's \(NHC\) Center for Housing Policy](#)
- [National Housing Trust \(NHT\)](#)
- [National Low Income Housing Coalition \(NLIHC\)](#)
- [NeighborWorks® Network](#)
- [Rebuilding Together](#)
- [State and Local Housing Trust Funds](#)

### Workforce Development

- [AmeriCorps](#)
- [DOL Apprentices Programs](#)
- [Workforce Investment Boards](#)

### Aging and Public Health

- [AARP Network of Age-Friendly Communities](#)
- [American Hospital Association \(AHA\)](#)
- [American Nurses Association \(ANA\)](#)
- [American Physical Therapy Association \(APTA\)](#)
- [American Public Health Association \(APHA\)](#)
- [American Occupational Therapy Association \(AOTA\)](#)
- [Community Health Workers](#)
- [Health in Aging](#)
- [National Aging in Place Council® \(NAIPC\)](#)

# Senior Falls Prevention and Coordinated Care

## Potential Partners

This list of organizations and coalitions may help you consider potential partners and what they offer your collaborative. National organizations can connect you to their state and local members as well as provide more information about the types of programs and services their members offer. Organizations already involved in senior falls prevention and/or aging in place initiatives may provide resources and links to research that can help support local policy and program efforts, as well as offer suggestions to overcome obstacles you might encounter. In addition to the organizations listed below, please also consider reaching out to and partnering with labor unions, civic organizations, and other community leaders who often interact with and influence community-based seniors. They can potentially provide insight and input on additional ways to improve service delivery and coordinated care to help seniors safely age in place. (Please note the non-endorsement disclaimer provided at the beginning of this document. It applies to all of the organizations and materials listed throughout this toolkit.)

## Housing and Community Development

Although few housing or community development groups were listed as partners in existing state falls prevention coalitions,<sup>12</sup> public health and aging agencies interested in providing falls prevention interventions and creating coordinated care models should consider working with these groups because they often provide much needed affordable housing for seniors as well as trained staff to conduct home modifications. Most of these groups work directly in states and/or localities, so the links provided here are primarily to national organizations that may be able to connect to their state and/or local partners.

National associations and intermediaries can provide guidance to public health and aging sectors looking to partner with community-based organizations (CBO) as well as help you connect with local organizations in your area or region. For example:

- [NeighborWorks® Network](#). NeighborWorks® America provides [quarterly training institutes](#) that feature sessions on issues from developing and empowering community leaders to providing resident services for vulnerable populations such as seniors. Its network includes local community nonprofits.
- [Enterprise Community Partners -Local Offices](#). Enterprise Community Partners recently released [Aging in Place Design Guidelines](#) for

<sup>12</sup> Ibid., 5.

## Potential Partners

### Aging and Public Health-cont

- [National Association of Area Agencies on Aging \(N4A\)](#)
- [National Association of Community Health Centers \(NACHC\)](#)
- [National Coalition on Care Coordination \(NC3\)](#)
- [National Coalition of Consumer Organizations on Aging \(NCCO\)](#)
- [National Council on Aging \(NCOA\)](#)
- [NCOA's Falls Free® Initiative](#)
- [State Fall Prevention Coalitions](#)

### Local and Regional Healthy Aging Collaborations

- [Healthy Aging Regional Collaborative of South Florida](#)
- [New Mexico Healthy Aging Collaborative](#)
- [Massachusetts Healthy Aging Collaborative](#)

### Civil Service and Related Public Officials

- [Association of State and Territorial Health Officials \(ASTHO\)](#)
- [National Association of County and City Health Officials \(NACCHO\)](#)
- [National Association of States United for Aging and Disabilities \(NASUAD\)](#)
- [National Council of State Housing Agencies \(NCSHA\)](#)
- [Public Housing Authorities \(PHAs\)](#)
- [State and local public health departments](#)
- [State Unit on Aging \(SUA\)/Area Agency on Aging \(AAA\)](#)

# Senior Falls Prevention and Coordinated Care

both renovation and new construction for multifamily buildings. Its [Senior Housing](#) initiative provides links to research and case studies, as well as to the [Affordable Senior Housing Learning Collaborative](#) created with LeadingAge to support delivery of community-based services to seniors.

- [Local Initiatives Support Corporation \(LISC\)](#). LISC provides CBOs with critical financing and support for sustainable affordable housing and senior services.
- [Habitat for Humanity](#)® offers partnership opportunities and services that vary according to the local affiliate. Many provide critical home repairs to help low-income homeowners remain in their homes and communities.
- [Rebuilding Together Affiliates](#). Rebuilding Together works with volunteers across the country to provide home repair and modifications to low-income community residents. Many of its affiliates are working with healthcare providers to carry out home repairs and modifications for seniors.
- [Rebuilding Together and the American Occupational Therapy Association \(AOTA\)](#) are working to help local occupational therapists partner with their Rebuilding Together affiliates. (The home safety checklist commonly used by Rebuilding Together to assess the safety of a senior's home and determine what modifications are needed can be found in the Appendix.)
- [State and Local Housing Trust Funds](#) provide dedicated funding for affordable housing production. Funds are used to create and renovate housing to meet the specific needs of the community. The [Center for Community Change](#) provides extensive information on housing trust funds, how they work, and where to find them.
- [National Housing Trust \(NHT\)](#). NHT is a nonprofit policy advocate, developer, and lender focused on preservation of affordable housing, especially housing considered "at risk of redevelopment." NHT works with community nonprofits across the country to preserve senior housing and provide key services needed by seniors to remain in their homes.
- [National Alliance of Community and Economic Development Associations \(NACEDA\)](#). NACEDA's membership of [statewide and regional community and economic development associations](#) may be able to help connect to your local CDCs. Alternatively, you can find CDCs in your community through your local housing and community development or planning agencies.
- [Community Action Partnership](#) represents a network of 1,000 [Community Action Agencies \(CAAs\)](#) across the country. CAAs provide a wide-array of services, from Meals on Wheels and health clinics to transportation for low-income community residents, especially in rural areas.
- [HUD's field offices](#) provide key information and connections on housing and community development opportunities. They may also be aware of new funding or demonstration projects that can promote aging in place and home and community-based senior falls prevention programs in your community.

## *Housing Advocacy and Research*

These national organizations provide a wealth of information and resources about low-income housing and resident services for seniors. Several also have community-based members or local chapters.

- [National Low Income Housing Coalition \(NLIHC\)](#). [NLIHC members](#) are located across the nation and include individuals as well as local and state organizations committed to affordable housing and community development.

# Senior Falls Prevention and Coordinated Care

- [National Housing Conference's \(NHC\) Center for Housing Policy](#) offers extensive research on affordable housing issues, including the impact of housing on health and seniors. [NHC's membership](#) includes banks, foundations, insurance companies, and a host of other organizations that can help support senior services and aging in place policies.

## Workforce Development

Many CBOs provide workforce development and apprenticeship opportunities for local residents through the U.S. Department of Labor (DOL) or the Corporation of National and Community Service programs. These programs often provide hands-on home repair and renovation training and are looking to partner with organizations interested in providing these services. For example:

- [Workforce Investment Boards](#) help set and guide state workforce development policies and funding.
- [Apprentice Programs](#) featured on this DOL career website may be able to connect you to an [AmeriCorps](#) group in your community that provides home repair through their training programs. Although the resource is technically for job seekers, it can help you identify groups (if any) that are offering programs in your community.

## Aging and Public Health

- [National Council on Aging \(NCOA\)](#) partners with various public and private sector organizations to advocate for innovative community programs and services for seniors.
- [NCOA's Falls Free® Initiative](#) supports 42 falls prevention coalitions across the country via quarterly calls and a policy toolkit designed to help guide the coalitions' pursuit of local policy as well as support NCOA national policy objectives.
- [State Fall Prevention Coalitions](#). These coalitions are primarily managed by the state public health departments or aging agencies that administer falls prevention programs and interventions. A recent survey found few of the coalitions currently include housing and community development partners. The survey also reported that only 34 of the 42 coalitions are currently active.
- [National Coalition of Consumer Organizations on Aging \(NCCO\)](#). NCCO is a small collaborative network of state- and community-based senior-based consumer organizations working on community-based long-term care issues. NCCO builds support for funding and policy for federal programs, such as Medicare, Medicaid, Social Security, and the Older Americans Act. Scroll down [NCCO's homepage](#) to find links to state-level members in Arizona, Colorado, Minnesota, Oregon, Washington, and Wisconsin.
- [National Association of Area Agencies on Aging \(N4A\)](#). N4A represents a national network of more than 600 Area Agencies on Aging (AAAs). Local AAAs administer most fall prevention programs, especially single interventions focused on exercise and balance. N4A resources include training and education on aging issues ranging from home- and community-based services and legislation related to the elderly to livable communities and funding opportunities at the national and local level. [Find your State and/or Area Agencies on Aging](#).
- [Health in Aging](#) was created by the American Geriatric Society's (AGS) Health in Aging Foundation to provide consumers and caregivers with current information on health and aging. It offers an abundance of information about key stakeholders in senior falls prevention and care coordination for aging in place. Resources include materials AGS developed for its professional members and provides a searchable [list of professionals working in geriatric healthcare](#).

# Senior Falls Prevention and Coordinated Care

- [National Coalition on Care Coordination \(NC3\)](#) works to improve the quality of senior care by supporting care coordination in health and social sectors. NC3 advocates for policies that support care coordination between healthcare and long-term support services (LTSS). [NC3's membership](#) is a mix of national, state, and local organizations representing consumers, aging and social services, family caregivers, and healthcare professionals who recognize that coordinated care for seniors requires an interdisciplinary, patient-centered approach.
- [National Aging in Place Council® \(NAIPC\)](#) serves as a support network for seniors interested in remaining in their homes as they grow older. The network helps link seniors with a range of service providers and caregivers that can assist them. Access NAIPC's list of [local chapters](#) to see if your community has one or how to work with NAIPC to create one.
- [AARP Network of Age-Friendly Communities](#) is an initiative helping U.S. states, cities, towns, and rural areas prepare for an aging population. It focuses on environmental, economic, and social factors that influence seniors' health and wellbeing. [Members of the network](#) may be able to connect you to key stakeholders on senior issues in your community.
- [American Hospital Association \(AHA\)](#) provides extensive information about trends and research in the healthcare industry, including guidance on building [community connections](#). Collaborate with [State, Regional and Metropolitan Hospital Associations](#) as well local hospitals and healthcare systems in your community to improve senior care policies in your community.
- [National Association of Community Health Centers \(NACHC\)](#) represents community health centers (CHC) that bring affordable primary and preventive healthcare services to low-income urban and rural communities. NACHC conducts research and collects data at both the national and state level. Partner with NACHC's cadre of [State Affiliates](#) or the Health Resources and Services Administration's listing of [Community Health Centers](#) operating across the country.

Frontline community healthcare professionals, such as nurses, physical and occupational therapists, and community health workers, are essential partners for successful fall prevention and coordinated care collaborates. For example:

- [American Nurses Association \(ANA\)](#) is the national advocacy organization for U.S. registered nurses (RNs). Nurses can play a key role in creating senior falls prevention programs and managing coordinated care. Your [State's Nursing Association](#) may be a good advocacy partner as well as help connect you to nurses and other healthcare providers in your community.
- [American Physical Therapy Association \(APTA\)](#) can help keep you up to date on physical therapists' (PTs') efforts on fall prevention as well as link you to its [local chapter](#).
- [American Occupational Therapy Association \(AOTA\)](#) provides useful material on home modifications to help reduce senior falls as well as information, such as national and state guidelines, policy, and regulations, to help seniors safely age in place. Occupational Therapists (OTs) help identify and remedy home hazards, often in tandem with local and national home repair and renovation groups such as [Rebuilding Together](#).
  - AOTA provides links to a number of national [home modification partners](#) who offer additional guidance about how to modify a senior's home for safety.
  - AOTA's list of [State OT Associations](#) is a good starting place to learn more about and reach out to local OTs working in your community.

# Senior Falls Prevention and Coordinated Care

Community Health Workers (CHWs) are generally non-licensed providers of health and social services. CHWs deliver social and healthcare services to community residents, and are often residents of the community or have a strong understanding of the needs of the community in which they work. The specific roles and activities of CHWs are generally tailored to meet the needs of the community. They often fill major social and healthcare service delivery gaps, especially in rural areas. Current Medicare rules also allow for reimbursement of preventive services offered by CHWs as long as the services are prescribed by the senior's primary care physician or other licensed practitioner.

Many CHWs in the U.S. can be found in the membership of the [American Public Health Association \(APHA\)](#), and a few states and cities have created CHW networks, but there appears to be no national association or network of CHWs. [APHA's State and Regional Affiliates](#) may be able to connect you to CHWs in your community.

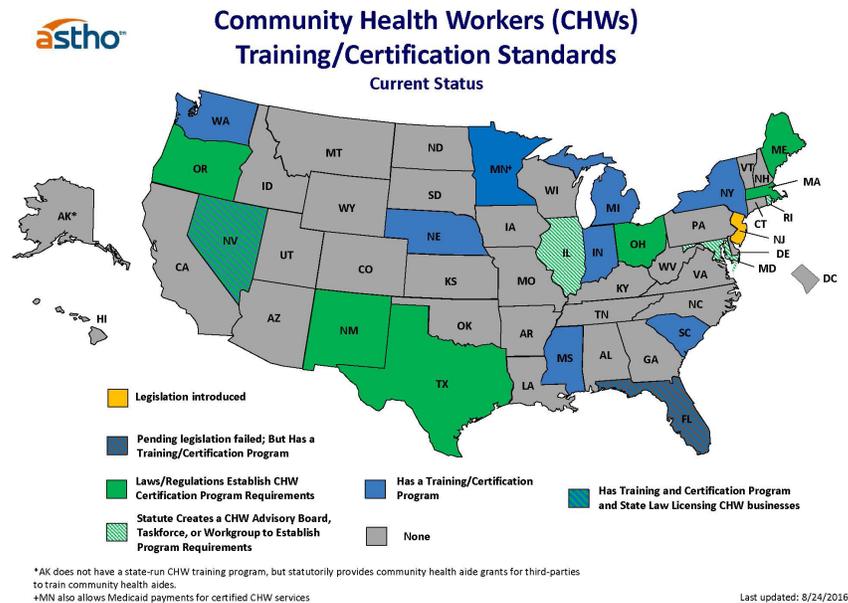
## Local and Regional Healthy Aging Collaborations

Although no national healthy aging organization appears to exist, there are a few state, local, and regional collaborations that have formed around healthy aging. They may provide your organization with a model on which to build a collaborative around healthy aging, senior falls prevention, and coordinated care in your community. For example:

- [Healthy Aging Regional Collaborative of South Florida](#)
- [New Mexico Healthy Aging Collaborative](#)
- [Massachusetts Healthy Aging Collaborative](#)

## Civil Service and Related Public Officials

- Officials within the executive branch of federal, state, tribal and local governments, and the management of related entities, such as independent public housing, redevelopment, or health agencies that often coordinate with those governments, can help identify information and other resources for your program. For example:
- [State and local public health departments](#) are responsible for administering and managing much of the funding for falls prevention and coordinated senior care.
- [State Unit on Aging \(SUA\)/Area Agency on Aging \(AAA\)](#). SUAs and AAAs receive funds from the U.S. Agency on Aging (AOA) to administer supportive home and community-based services.
- [National Association of States United for Aging and Disabilities \(NASUAD\)](#) represents state and territorial



# Senior Falls Prevention and Coordinated Care

agencies on aging and disabilities, and promotes systems innovation and national policies that support senior home- and community-based services.

- [National Association of County and City Health Officials \(NACCHO\)](#) is a major national advocate for state and local county officials. Its map of [State Associations of County and City Health Officials \(SACCHO\)](#) provides a list of all states with state and local associations. The [Association of State and Territorial Health Officials \(ASTHO\)](#) is another resource to help you connect to [local public health agencies and professionals](#). ASTHO also provides a wealth of information on [CHW](#) including an outline of current [state standards for CHW Training and Certification](#).
- [National Council of State Housing Agencies \(NCSHA\)](#). NCSHA represents local and state housing finance agencies (HFAs) across the country. HFAs administer affordable housing programs such as Mortgage Revenue Bonds (MRBs), the Low Income Housing Tax Credit (LIHTC), and the HOME Investment Partnership (HOME). Although the federal government requires certain thresholds are met, most of the funding for LIHTC and MRBs is guided by criteria dictated by the state's annual Qualified Allocation Plan (QAP). Access NCSHA's [listing of local HFAs](#) to learn who manages these programs in your area.
- [Public Housing Authorities \(PHAs\)](#) provide federally and/or state subsidized rental housing for low-income families, seniors, and people with disabilities. Housing ranges from scattered site single-family to high-rise multiunit senior complexes.

As you build your partnerships, remember to communicate with, and develop a rapport with your state, tribal, and local elected and appointed officials. Keeping them informed and up-to-date about your efforts and partnerships supporting senior falls prevention and care coordination in your community, as well as the economic and health benefits, and listening to their comments and questions, can help build much needed support for system change.

Although much of the funding for senior falls prevention and coordinated care currently comes from the federal government, many decisions made at the state, tribal, and local level determine how the funding is administered and managed. By educating elected officials about the needs of our aging communities, you will help to create advocates and champions. Find contact information for your [Governor](#), officials in your [state legislature, tribal government](#), and [local officials](#).

Additionally, always consider your [Congressional representatives](#) as partners in your community efforts, and keep them informed and up-to-date on successful innovative, non-traditional partnerships. They especially will want to learn about cost neutral programs or those that can potentially save taxpayer money. Educate these elected officials about the benefits partnerships create and the obstacles that must be overcome to help local communities.



Although public health and aging agencies have traditionally been at the forefront, leading senior falls prevention coalitions, affordable housing providers, and community service organizations also have the potential to facilitate strong, comprehensive approaches to senior care and aging in place efforts. Regardless of which sector leads the effort or contributes financial support, each benefits by bringing unique skills and insight that can only improve overall delivery of care.

# Senior Falls Prevention and Coordinated Care

## IV. Financing Senior Fall Prevention and Coordinated Care

According to the U.S. Department of Health and Human Services (HHS), at age 65, the typical person in the U.S. can be expected to live approximately another 20 years. One third of the over 65 age group will fall annually and more than half can expect to need some level of long-term support and services (LTSS) over that 20-year period. For some, it will be a short-term need (less than a year), but about 14 percent of seniors will need LTSS for more than five years (Favreault 2016).<sup>13</sup> Senior fall prevention and coordinated care programs are needed to help keep community-dwelling seniors healthy and safe, and provide the LTSS needed to help them age in place.

Creating partnerships between diverse organizations and agencies is one step toward overcoming major obstacles to providing coordinated delivery of services to seniors. Finding innovative and creative ways to fund service delivery is another. Just as partners from different sectors bring diverse skills and knowledge to the collaborative, they also often have access to different funding sources for their projects. Housing partners will be aware of grants and programs usually available to fund affordable housing rental and home repairs, while public health and aging service providers will be familiar with funds available for service delivery to seniors. The goal should be to leverage funds from various sources to create a funding pool or portfolio that supports your program and its delivery of services.

### Making the Case for Your Senior Falls Prevention and Coordinated Care Program

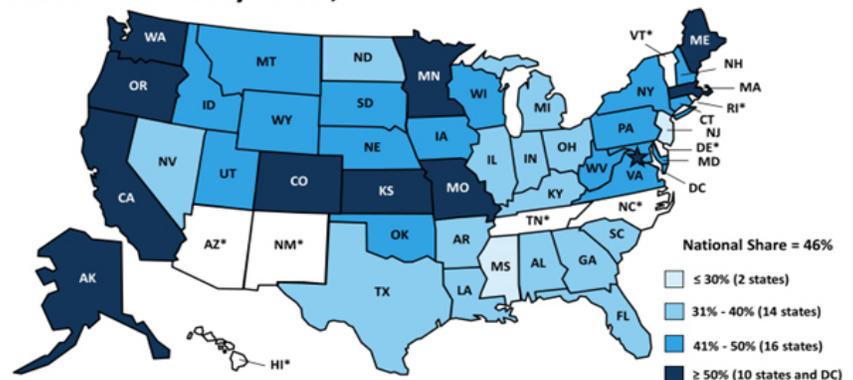
Once you have created partnerships and have established your program's mission statement as an initial collaboration among your partners, as described in sections II and III, securing funding is often the next step.

This is a very competitive process. Your program will need to stand out from many other deserving programs to show why it should receive funding. It should exemplify the triple aim framework to (1) improve delivery and quality of services to seniors; (2) improve seniors' health; and (3) reduce healthcare costs.

Applications and proposals for funding should illustrate a clear story of what initiated the program from the beginning (what situation prompted the initiative) to the end (what benefit or value is the program expected to achieve). It must clearly articulate the problem you are attempting to address and the structure of the collaborative you have designed to resolve it. Proposals should include

information about why a partnership approach is essential to resolve the issue and, as feasible, the list of partners and sectors you have recruited (or, optionally, and less likely to be effective, you intend to recruit) to

**The Proportion of Medicaid Long-Term Services and Supports Spending For Home and Community-Based Services Varies by State, 2013**



NOTE: All spending includes state and federal expenditures. HCBS expenditures include state plan home health services, state plan personal care, targeted case management, hospice, home and community-based care for the functionally-disabled elderly, and services provided under HCBS waivers. Expenditures do not include administrative costs, accounting adjustments, or expenditures in the U.S. territories.  
\*Spending for AZ, DE, HI, NC, NM, RI, TN, and VT is not shown due to their funding authority for HCBS and/or the way spending is reported.  
SOURCE: Urban Institute estimates based on data from CMS Form 64 as of September 2014.



<sup>13</sup> *Long-Term Services and Supports for Older Americans: Risks and Financing* (2016). Melissa Favreault and Judith Dey. Office of Disability, Aging and Long-Term Care Policy, U.S. Department of Health and Human Services.

# Senior Falls Prevention and Coordinated Care

the collaborative. Again, as feasible, specific qualifications and skills each organization brings to the partnership should be highlighted.

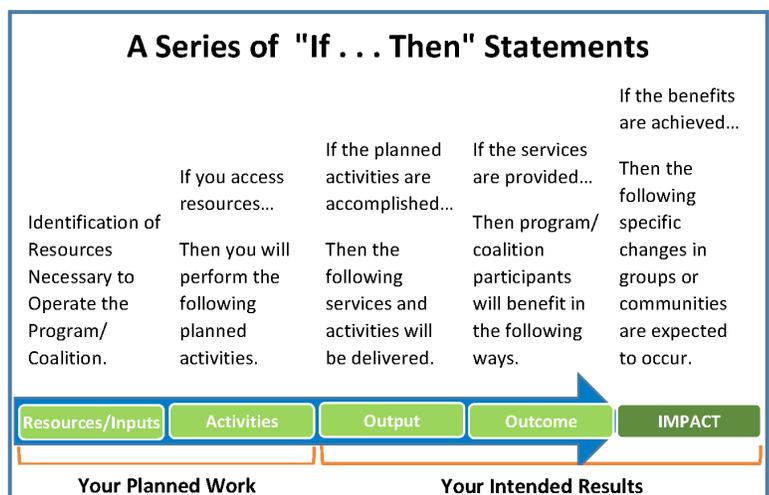
Your proposal should include a clear framework for how the organizations will work together, including which organization will be leading the efforts or ultimately responsible for the success of the program. Additionally, your proposal will also need to outline steps and implementation timelines, with a clear understanding of the milestones you intend to achieve along the way. As you develop your framework, also consider what objections or challenges you might encounter during the process to address potential concerns raised by funders. Record these barriers and start compiling responses for how you intend to manage them.

Your proposal must also provide a detailed budget that clearly outlines your expected expenditures (as well as any potential income) for the program. Your program's projected financial statements should include expected initial startup costs (if any), as well as annual expenditures for staff, services, and administration of the program. If feasible, costs related to ongoing program evaluation (see section V) should also be included as an expenditure. Outlining these costs helps potential funders understand how you intend to manage investments in your program.

If you expect that your organization and/or some partners will bring funds or other leveraging resources into the program, your financial statements should also reflect the anticipated amount (including identifying the market value of goods and services to be part of your program's leveraging). Specific letters of leveraging commitment from officials of your and/or partner organizations who have authority to make such commitments are beneficial, and are required by some funders. Providing this information helps the potential funder understand how your partnership has brought experienced key partners together to offer services versus "re-inventing the wheel." It also shows the level of organizational commitment to the program (i.e., "Money talks"). It often can also help you leverage existing funding to attract new, additional funders.

Logic models, which funders often use to assess the effectiveness of a program, can be used to help plan and implement your program. A logic model visually maps out the resources needed to operate your program, shows your planned activities, and highlights the outcomes or results you hope to achieve. Using a logic model approach to design the framework of your partnership and program may improve your chances of receiving funding. There are several examples of logic models available to help you, for example;

- [The Falls Free® Logic Model](#), created by NCOA, can help coalitions systematically outline the activities their senior falls prevention coalitions plan to accomplish along with the outcomes and impact they hope to achieve.
- The CDC Division for Heart Disease and Stroke Prevention provides an [Evaluation Guide](#) that illustrates how to develop and use a logic model with step-by-step-instructions.
- The W.K. Kellogg Foundation (WKKF) created an in-depth [Logic Model Development Guide](#) that assists with program planning, implementation and outreach. Although intended primarily for



# Senior Falls Prevention and Coordinated Care

nonprofit organizations, the tool can be used by any organization interested in understanding and using the principles of logic modeling to develop a strong business case for funding.

Finally, your proposal or application must provide a clearly articulated “ask” (i.e., what exactly you are requesting in the way of resources, funding, authorization or support, and how exactly you know that your program will provide the intended outcomes). Developing a clear “ask” is useful for building confidence that your collaborative and its outlined service delivery proposal will prevent senior falls and provide much needed coordinated care.

## Where to Find Financial Support

A number of government programs provide funding for senior care, but accessing them and coordinating their resources can be challenging. Although such programs are often complex and not well-coordinated, by working closely with your local and state program administrators, you should be able to combine funds from various agencies for your project. Additionally, many foundations support senior falls prevention and coordinated care programs.



It is important to note that many programs that reduce falls among the elderly are not necessarily conceived as “falls prevention” programs. They often take a broader approach to senior healthcare by addressing multiple issues, including home environment, nutrition, and physical and social wellbeing. Some even offer coordinated health care management. Although funding for all senior service delivery programs is limited, in recent years, funding specifically for senior falls prevention has become especially tight. While some of the following funding resources may cover falls prevention specifically, others may embed falls prevention interventions as one element of an overall approach to providing healthcare and aging in place services to community-dwelling seniors.

Applying for grants takes time, effort, and patience. Plan on submitting grant applications to multiple sources (governments, foundations, insurance companies, trade groups, etc.) and applying for several years before you receive funding. Consider requesting debriefings from funders who have rejected your proposals, and use the information and insights provided to improve your future applications to them or other funders.

## Government Funding

As reflected by many of the following funding programs, in recent years, HHS and HUD have proactively moved toward a more collaborative system in which both agencies provide funding and technical assistance (TA) to support state and local agencies and community partners’ efforts to provide LTC and LTSS to community dwelling seniors.

### U.S. Department of Health and Human Services (HHS)

The vast majority of U.S. Department of Health and Human Services (HHS) funding for senior fall prevention and coordinated care is provided through the [Centers for Medicare and Medicaid Services \(CMS\)](#) and the [Administration for Community Living \(ACL\)](#). CMS is the main administrator of funding and programs supporting

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senior healthcare. The [CMS Innovation Center](#) provides information about various healthcare payment and service delivery models being tested across the country and opportunities to determine what other organizations are working on innovative senior care programs near or in your community. [Partner with CMS](#) to access more resources.

## CDC National Center for Injury Prevention and Control (NCIPC)

A significant amount of the funding for senior falls prevention programs has historically come from the CDC's National Center for Injury Prevention and Control (NCIPC). In the past, it has funded numerous falls prevention initiatives and conducted an extensive amount of research on interventions. Currently, NCIPC's falls prevention funding is reserved for training service providers and STEADI Step Two, which is designed to improve seniors care by expanding education and outreach on evidence-based falls prevention programs. The [STEADI \(Stopping Elderly Accidents, Deaths and Injuries\) Initiative](#) provides key information to both healthcare providers and seniors to help reduce the incidence of falls in the community.

## Administration for Community Living (ACL)

The Administration for Community Living (ACL) is the primary federal agency supporting [fall prevention interventions](#). Funding comes from the Prevention and Public Health Fund (PPHF) created under the Affordable Care Act (ACA). ACL funds support the [National Falls Prevention Resource Center](#) managed by the National Council on Aging (NCOA) as well as specific Evidence-Based Falls Prevention Programs in the community. This center provides tools and resources to ACL Falls Prevention grantees and their partners. The [Prevention and Public Health Fund \(PPHF\) Reporting Database](#) provides funding opportunity announcements, requests for proposals, and other solicitations available for activities funded by the PPHF. ACL also maintains a [Funding Opportunity Announcements](#) that features various grants available from ACL.

## Centers for Medicare & Medicaid Services (CMS)

Medicaid is the government-sponsored health insurance program for eligible low-income populations, including low-income seniors. Funding and administration is managed through state-federal partnerships. Medicaid funding in each state is a combination of state-appropriated funds and federal Medicaid funds, which are matched to the state depending on its per capita income. For example, states with low per capita income like Mississippi receive more federal Medicaid dollars than states like New Jersey or Connecticut, which have higher per capita incomes. States set their own guidelines for eligibility, services, and payment rates as long as they comply with federal Medicaid laws. Federal Medicaid laws set both specific thresholds and restrictions for what states must do to receive funding.

Although all state Medicaid programs are required to cover nursing facility costs for eligible participants, coverage for most home- and community-based services (HCBS) is optional. The ACA authorized and expanded several new waivers to increase HCBS options. States interested in delivering HCBS to Medicaid beneficiaries may elect to offer options such as the Community First Choice (CFC) or HCBS waivers. Although not all states elect to provide these options, there is an increased movement to provide HCBS as they are much more cost effective than care in a long-term nursing facility.

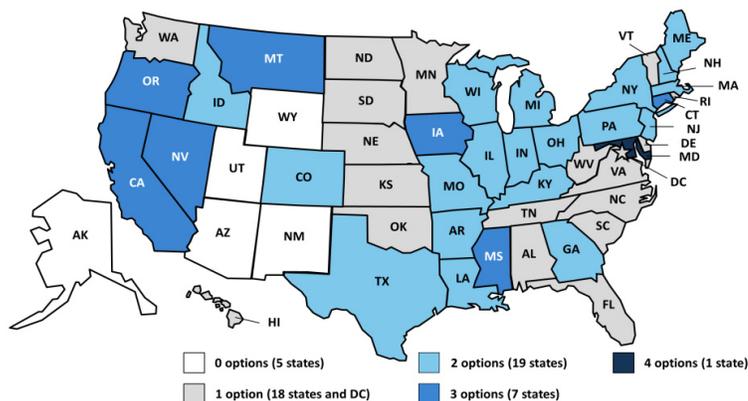
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## Home and Community-Based Services (HCBS) Waivers

A Home and Community-Based Service (HCBS) waiver from HHS allows states the flexibility to design and implement a Medicaid program to meet the needs of their specific residents. HCBS waivers give a state authorization to disregard certain provisions of the Medicaid law in order to offer experimental, pilot or demonstration projects that promote Medicaid program objectives. States interested in obtaining an HCBS waiver must submit an application to CMS that outlines the program's goals and how it would operate. Applications are subject to public review and comment prior to approval.

HCBS projects can illustrate and evaluate the potential of various policy approaches, such as expanding program eligibility to people not otherwise Medicaid eligible; delivery of services not typically covered by Medicaid; and innovative services delivery systems that improve care, increase efficiency, and reduce costs. Some state-granted HCBS waivers must follow more stringent rules, such as no service caps or waiting lists, and must offer services statewide. [Learn more about Medicaid HCBS programs.](#)

**Most States Are Participating in Multiple Medicaid Home and Community-Based Services Options (HCBS) Provided or Enhanced by the Affordable Care Act, April 2015**



NOTES: Included options – Money Follows the Person Demonstration, the Balancing Incentive Program, the Section 1915(i) HCBS state plan option, and the Section 1915(k) Community First Choice state plan option  
SOURCES: Medicaid.gov and state websites.



## Community First Choice (CFC)

Community First Choice (CFC) allows states to provide HCBS and care attendants to eligible seniors to help them remain in their own homes and communities, and avoid moving to a long-term care institution. Beneficiaries direct as much of their own care as possible, including having the right to interview, hire, and fire (as necessary) care attendants. States selecting the CFC option receive an increased share of federal Medicaid payments and are subject to higher Medicaid standards (i.e., no caps on services, waiting lists, or geographic restrictions).

## Money Follows the Person (MFP)

Money Follows the Person (MFP) encourages the transition of seniors from institutional care to home and community settings. Under MFP, states that opt into the program receive an increased share of federal Medicaid funds for 12 months for each Medicaid beneficiary who moves from a long-term care facility back into the community. MFP funding helps provide HCBS to seniors returning to the community to reduce the use of more expensive institutional services. Forty-three (43) states and the District of Columbia are currently participating in the demonstration program. Although MFP was due to expire in 2016 (as of this writing, the Fiscal Year 2017 Medicaid Budget had not been passed, so MFP's FY2017 status had not yet been determined), unspent grant funds awarded in 2016 can be used through fiscal year 2020.

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## Program of All-Inclusive Care for the Elderly (PACE)/Living Independence for the Elderly (LIFE)

Program of All-Inclusive Care for the Elderly (PACE)/ Living Independence for the Elderly (LIFE)<sup>14</sup> programs are comprehensive service delivery systems for dual-eligible seniors using integrated Medicare and Medicaid funding. PACE participants are eligible for admission to a nursing home, but choose to stay in their community. PACE covers all of the beneficiary's health and long-term care needs, providing necessary medical and social services either directly or through contracts with other service delivery providers.



Although PACE was one of the earliest coordinated care initiatives, it has met some implementation challenges. It requires a substantial upfront investment; enrollees are often hesitant about changing their primary care physicians; and there are some participation barriers for middle-income seniors.<sup>15</sup> As of March 2017, PACE was available in 31 states.<sup>16</sup>

## Medicare Financial Alignment Initiative

The [Medicare Financial Alignment Initiative](#) addresses the differences in financial alignments of Medicare and Medicaid funding, which may inhibit coordinated care for “dual-eligible beneficiaries.” Such beneficiaries are seniors enrolled in both Medicaid and Medicare. Although Medicare pays for a broad range of services for their care, most LTSS costs are covered by Medicaid. The waiver attempts to improve the integration and coordination of healthcare and services for seniors.

Organizations seeking waivers to offer HCBS services must first verify that the option they are seeking coverage under has been selected by their state. Next, they must work with the state to develop and submit an application to CMS. The state must submit the application to CMS with the assurance that it supports the applicant's request.

## State Innovation Model (SIM) Initiative

The [State Innovation Model \(SIM\)](#) Initiative provides financial and technical support to states to develop and test state-led, multi-payer healthcare payment and service delivery models that achieve the triple aim framework (i.e., improve the performance of the health system, increase and improve the quality of care, and decrease costs for Medicare and Medicaid Program beneficiaries). States interested in participating in the initiative must submit a State Health Care Innovation Plan proposal to CMS that describes the state's planned strategy to use all of the resources available to transform its healthcare delivery system through multi-payer payment reform and other

<sup>14</sup> PACE and LIFE are basically the same program but various states use different names for the programs.

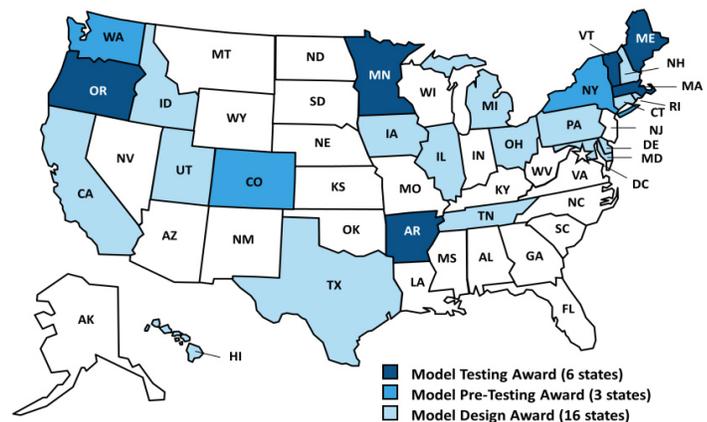
<sup>15</sup> 'Effects of the Program of All-Inclusive Care for the Elderly on Hospital Use', Meret-Hanke, Louise A. The Gerontologist (2011). Available at <http://gerontologist.oxfordjournals.org/content/early/2011/07/06/geront.gnr040.abstract>

<sup>16</sup> Find a PACE Program in Your Neighborhood. Available at [www.npaonline.org/pace-you/find-pace-program-your-neighborhood](http://www.npaonline.org/pace-you/find-pace-program-your-neighborhood)

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state-led initiatives. Medicare and Medicaid program rules can be complex, sometimes making it difficult to use this funding for initiatives that include non-traditional providers or care settings. Population-based approaches and programs that are not run statewide can also experience difficulties using Medicaid dollars. CMS's [Integrated Care Resource Center \(ICRC\)](#) was created to help states learn and share best practices for delivering coordinated healthcare to dual-eligible beneficiaries. [Medicaid Funding of Community-Based Prevention](#), a 2013 report released by the nonprofit health system, Nemours, also attempts to sort through the myths and realities of working with Medicaid funded programs. The report provides insights on how many states have learned to navigate the rules.

## State Innovation Models (SIM) Round One Awards



SOURCE: Centers for Medicare & Medicaid Services

## U.S. Department of Housing and Urban Development (HUD)

Numerous Department of Housing and Urban Development (HUD) programs provide affordable housing to moderate- and low-income seniors in communities across the country. Housing programs include Section 202 Supportive Housing, which is a production program specifically for the elderly, as well as public housing and housing choice vouchers administered by local PHAs, and privately owned multifamily housing subsidized by HUD. Many of these programs also include supportive service programs to help senior residents age in place. Most, if not all, such residents living in HUD-subsidized homes are dual-eligible Medicaid/Medicare beneficiaries. Although many HUD-assisted properties provide supportive services, these services are often funded with CMS funds through cooperative agreements with CMS service providers.

### Section 202 Supportive Housing for the Elderly Program

[Section 202 Supportive Housing for the Elderly](#) is the only HUD program that provides housing exclusively to seniors. HUD offers rent subsidies and loans to private, nonprofit organizations to develop supportive housing for very low-income seniors. Demand for Section 202 housing is very high. It is not uncommon for seniors to be on wait lists for a year or longer. HUD issues [grants and notices of funding availability](#) (NOFA) to support provision of services to seniors living in Section 202 housing.

### Supportive Services Demonstration for Elderly Households

HUD launched the [Supportive Services Demonstration Project](#) in 2016 to provide social resources and support to vulnerable populations living in HUD-assisted multifamily developments targeted to senior households. An



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interdisciplinary team, composed of an Enhanced Service Coordinator and Wellness Nurse, will provide supportive services to the collective needs of all residents. The team will also provide preventive health services and education, and act as a liaison with primary care and service providers. Resident participation is voluntary.

## HUD Assisted Living Conversion Program (ALCP)



The [HUD Assisted Living Conversion Program \(ALCP\)](#) is a HUD grant program designed to encourage private, nonprofit owners to convert some or all of a multifamily building into an Assisted Living Facility (ALF) or Service-Enriched Housing (SEH) to help seniors age in place. ALFs must be licensed and regulated by the state (or by the local jurisdiction if there is no state law for licensing and regulation). SEHs provide supportive services to seniors who need assistance with activities of daily living in order to live independently.

Although the level of conversion assistance varies from state to state, HUD sets minimum required standards for construction (e.g., accessible

bathrooms, community kitchen, and lounge or recreational facilities) and programming (e.g., 24-hour crisis response staffing and three meals per day).

## HUD Supportive Service Programs

### Service Coordinator Program

The [Service Coordinator Program](#) provides funding to hire Service Coordinators in HUD-subsidized multifamily housing that serve seniors. The Service Coordinator delivers long-term community based support, which connects residents with services ranging from meals, transportation, and housekeeping to medication management. Funding for Service Coordinators comes from either competitive grants or the property's excess income or residual receipts.

The Service Coordinator Program replaced the [Congregate Housing Services Program \(CHSP\)](#), which provided funding to Section 202 and public housing communities to help frail seniors age in place and avoid transitioning to long-term care institutions. CHSP communities provide residents meals and non-medical services such as housekeeping, transportation and social services. CHSP funds can also be used to provide service coordinators. Although no new contracts have been awarded under CHSP since 1995, some existing funds continue.

### Resident Opportunity and Self-Sufficiency (ROSS) Service Coordinator Program

The [Resident Opportunity and Self-Sufficiency \(ROSS\)](#) Service Coordinator Program is similar to the Service Coordinator Program in that it supports provision of services, such as meals, housekeeping and transportation, as well as assists with medication management. However, ROSS Service Coordinators specifically serve seniors residing in PHAs and senior housing facilities provided by nonprofit community partners.

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## Other Government Grant and Funding Opportunities

### U.S. Department of Agriculture (USDA)

#### [Section 504 Home Repair Program](#)

USDA's Rural Development agency administers the Section 504 Home Repair Program, which provides loans and grants to very-low-income seniors to repair and improve their homes to remove health and safety hazards.

### U.S. Department of Transportation

#### [Enhanced Mobility of Seniors and Individuals with Disabilities](#)

The Federal Transit Administration (FTA) Enhanced Mobility of Seniors and Individuals with Disabilities program provides direct funding to states to provide grants to community nonprofit organizations that offer transportation services to seniors and people with disabilities. Nonprofit recipients of the state grants can use this funding to provide seniors transportation to daily activities, such as grocery shopping, as well as to senior falls prevention classes and healthcare appointments.

Each state is a direct recipient of funds from this FTA grant program. Funds are apportioned based on each state's share of population for these groups of people. Nonprofit groups hoping to help meet the transportation needs of the elderly and persons with disabilities in areas where the service provided is unavailable, insufficient, or inappropriate to meeting these needs should contact their state transportation office to inquire about these funds. There is a 20 percent local match required for this grant program.



## Government Grant Search Engines

The federal government sponsors several grant search engines that operate across all federal agencies.

### National Institute on Aging (NIA)

[National Institute on Aging \(NIA\)](#) provides research grants and funding that may help support efforts to accurately track and evaluation program impact.

### Grants.gov

[Grants.gov](#) lets you find federal grant opportunities and download applications using multiple search factors. It also provides extensive information about the federal grants process process.

### USASpending.gov

[USASpending.gov](#) shows where and what federal grants have been awarded. It could be used to determine potential partners or identify similar projects that are already underway or in place in your community.

# Senior Falls Prevention and Coordinated Care

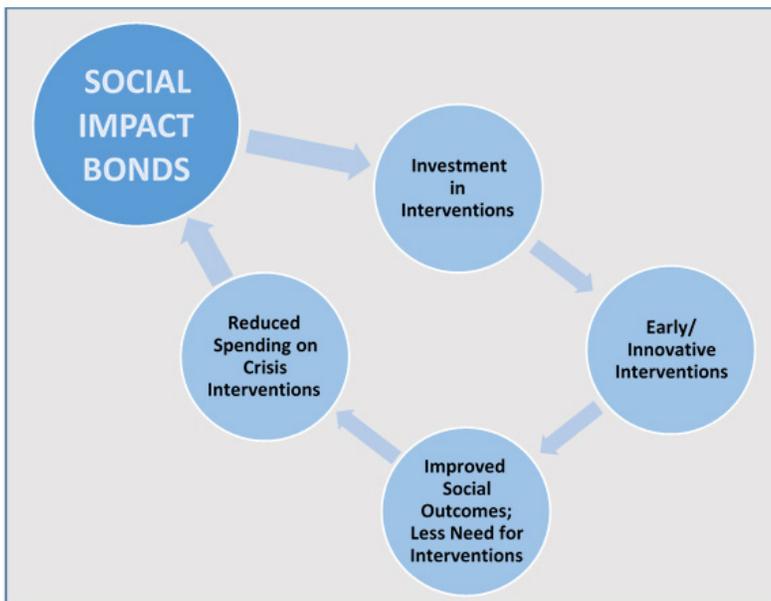
## Non-Governmental Funding

### Pay for Success (PFS)

Pay for Success (PFS) is a relatively new funding model in which payment for services is tied to measurable outcomes. Under this type of outcome-based financing, funding is provided after agreed-upon services have been delivered and met their prescribed objective(s). If the outcomes are not achieved, the service provider is not reimbursed for their services.

Service providers typically receive funding on an on-going basis for the work they do or what the services they provide, such as the number of people they serve or number of hours worked. However, this does not guarantee that the services they provide produce their intended impact. Under a PFS funding arrangement, a program only receives funding if its services can show measurable outcomes and meet their goals. For example, if an intervention program is supposed to reduce the number of seniors that fall, the provider only receives funding for the program when they can show fall rates among seniors have declined. To be fair, an independent evaluator is usually recruited to decide if the agreed upon outcomes have been met.

Since service providers rarely have the resources needed to provide services without immediate reimbursement, Social Impact Bonds (SIBs) and other investment mechanisms were created to provide the up-front funding needed to launch and run the program for a specified period of time (usually a span of several years).



Source: Adapted from [https://en.wikipedia.org/wiki/Social\\_impact\\_bond#/media/File:Social\\_Impact\\_Bond\\_diagram.JPG](https://en.wikipedia.org/wiki/Social_impact_bond#/media/File:Social_Impact_Bond_diagram.JPG)

The government uses investment tools such as SIBs to help service providers raise upfront funding for their programs. SIBs purchased by private commercial and philanthropic investors provide the capital to fund the delivery of services. If the project is successful, the government repays the investors. However, if a program does not meet its goals, the investors lose their investment.

Given the time and resources necessary to launch and implement successful programs, some foundations have also begun providing grants to support the first year or two of operation. This could be especially useful for a senior falls prevention and coordinated care collaborative, which involves referrals and service delivery from several partners who may not have previously worked together.

Foundation grants could help provide a “buffer” as partners learn to work together and address program start-up issues.

PFS initiatives are being used to scale up programs and interventions shown effective at a demonstration or smaller scale, as well as to test innovative models of service delivery. They have the potential to help the government be a better financial steward of public monies while still providing much needed services. However,

# Senior Falls Prevention and Coordinated Care

given the nascent nature of PFS initiatives, there is some uncertainty regarding how well they will work and what happens to the ability of the service provider to continue providing services once the contract period ends. Learn more about PFS funding at the [Pay for Success Learning Hub](#).

## Private Insurance Plans

Funding senior falls prevention and coordinated care programs funded through private insurance depends not only on whether a senior obtained long-term care (LTC) insurance, but also what the purchased package covers. According to the American Council of Life Insurers, many LTC insurance policies cover home-based services, including home modifications to help make a senior safer to navigate and avoid falls, but these services may have had to be selected at purchase. Perhaps more importantly, although many reports indicate that approximately 70 percent of the population will require LTC as they age, only about 10 percent of seniors currently carry LTC insurance. The premiums for this insurance are high, and recent news reports indicate that costs are continuing to climb and that some LTC insurers are leaving the market.<sup>17</sup>



Under the ACA, private insurers must pay for some clinical preventive services, including evidence-based screenings and counseling if the U.S. Preventive Services Task Force (USPSTF) recommendations rate them an “A” or “B.” In the 2012 release of USPSTF’s recommendation on falls prevention, only exercise or physical therapy and Vitamin D supplements for seniors “at increased risk for falls” received a grade high enough for coverage. Seniors with private insurance whose doctors prescribe an exercise-based falls prevention intervention regimen, which requires a fee to attend, may be eligible for reimbursement.

## Foundations

The following foundations and philanthropic organizations support efforts to reduce senior falls and help older adults age in place.

### AARP Foundation

The [AARP foundation](#) supports organizations whose evidence-based interventions make a direct impact on the quality of life for seniors. It offers grants to nonprofits providing low-income seniors with affordable safe housing and care.

### The Commonwealth Fund

The [Commonwealth Fund](#) is a private foundation that supports independent research on healthcare issues, and provides grants to improve healthcare practice and policy. Its health policy program supports innovative policies and practices.

<sup>17</sup> John Hancock Withdrawing from Long-Term Care Market. Forbes Magazine, November 10, 2016. Available at: <http://www.forbes.com/sites/jamiehopkins/2016/11/10/john-hancock-withdrawing-from-long-term-care-market/#48fb4104232b>

# Senior Falls Prevention and Coordinated Care

## The Harry and Jeanette Weinberg Foundation

One of the largest private charitable foundations in the U.S., [The Harry and Jeanette Weinberg Foundation](#), assists low-income and vulnerable populations through nonprofit grants to direct-service providers. The foundation's largest single funding availability area supports organizations that help low-income seniors continue to live independently in their communities.

## Health in Aging Foundation

The [Health in Aging Foundation](#), created by the American Geriatric Society, supports research on older adults and advocacy efforts that promote programs and policies that help older people lead healthy, active lives.

## Robert Wood Johnson Foundation (RWJF)

The [Robert Wood Johnson Foundation \(RWJF\)](#) supports research and programs targeted to community health and systems change. It has awarded several grants to CBOs, universities, and other nonprofits to improve senior care.

## Rockefeller Foundation

Initiatives run by the [Rockefeller Foundation](#) support programs targeted to improve healthcare, create sustainable cities, and impact investment and innovative financing, such as SIBs, which are used to help fund innovative healthcare programs.

## Tufts Health Plan Foundation

The [Tufts Health Plan Foundation](#) is a regional funder that supports programs to advance age-friendly communities in Massachusetts, Rhode Island, and New Hampshire.

## Home Instead Senior Care Foundation

Created in 2013, the [Home Instead Senior Care Foundation](#) launched the innovative "GIVE 65" crowd-fundraising platform to provide grants in which they collaborate with nonprofits to raise funds for their project and increase overall awareness of healthy aging.

## Foundation Center

The [Foundation Center](#) is a national nonprofit that helps connect organizations looking for various types of funding to donors interested in supporting their work. The Center offers a comprehensive database of more than 140,000 foundations and donors to help nonprofit organizations [find needed funding](#), and provides guidance on how to identify appropriate funders and pursue grant opportunities.

## Affinity Associations

The following "affinity" associations support foundations that fund aging and health-related issues. Although they do not offer grants or assistance to social sector organizations seeking grants, they often provide resources and information about projects and initiatives that may be occurring in your community. As you approach local grant-making organizations for support, helping them connect with these affinity organizations might also strengthen your case for support.

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## Grantmakers in Aging (GIA)

[Grantmakers in Aging](#) provides resources for funders interested in supporting [Falls Prevention](#) and [Aging in Place Initiatives](#). However, there is no link to member organizations.

## Grantmakers in Health (GIH)

[Grantmakers in Health](#) has members that support healthcare and healthy communities initiatives. Although GIH does not offer assistance to grant-seekers, it is possible to learn more about the organization's [Funding Partners](#).

## National Association of Area Agencies on Aging (N4A)

Many national membership associations, such as the [National Association of Area Agencies on Aging](#), also track and feature funding national, state, and regional opportunities for their members.

## V. Sustaining a Senior Falls Prevention & Coordinated Care Program

Once you have built your partnership and secured funding for your program, the next step is to determine how to sustain it. Sustainability requires effective implementation; ongoing outreach and publicity with key decision-makers; regular engagement with partners to ensure their needs and the needs of the community are being met; and continued funding to support the program's mission. These steps may also help you achieve your ultimate goal: preventing senior falls by impacting legislative, regulatory, and policy decisions about service coordination and funding for senior falls prevention and coordinated care.

### Program Evaluation

Evaluating your program is one of the most challenging responsibilities. Funding does not always cover evaluation costs and staff members may be resistant. Staff often perceive evaluation efforts as diverting program resources and time away from clients. Effective evaluation should start before you actually launch your program to capture the processes and challenges encountered during every step of program design, development, and implementation. Program evaluations are typically conducted to answer questions about whether a program is working as intended and, if not, to identify and explain why. Evaluations inform decisions and next steps about the program, including whether it should be continued, what are the needed adjustments, and can or should it be expanded to additional communities.



You can evaluate your program by seeking answers to these basic questions:

- Program design: Are services being offered to the right audience? Were the best partners for the task recruited? Are there gaps in services and/or partnerships? Have the appropriate marketing materials been created?
- Implementation: Are partners providing the agreed upon services? Is funding being allocated correctly to various services? Are partners working effectively together, making referrals as necessary, sharing information, and seeking joint funding? Are program outreach and marketing reaching and engaging the intended audiences?

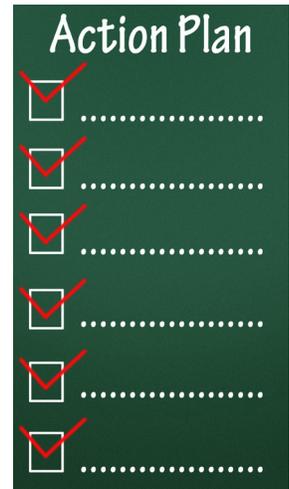
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- Performance outcome objectives: Are seniors receiving the care and services they need to safely age in place? Have falls been prevented and health improved? Is the program reducing healthcare costs and effectively delaying transition to long-term care? (Note that access to some or all of these data may be constrained by privacy and other laws and regulations, e.g., under the Health Insurance Privacy and Affordability Act).

Your evaluation should refer back to the goals and objectives set as you made your case for program funding. Were milestones met? Were they exceeded? If not, why not? If you encountered obstacles, they should be detailed along with an explanation of how you were able to overcome them. Your evaluation should also provide an opportunity to work with your service provider partners to determine how to better coordinate and improve service delivery. If you employed a logic model to help create your business case for potential funders, use it to facilitate your program evaluation. Academics with expertise in program evaluation (especially, statistical and other quantitative program evaluation methods) recruited to participate in the program may also provide expertise on your program evaluation. You might consider working with them to set up an ongoing evaluation process as well as assess the program's process and evolution strategies.

How you conduct your program evaluation is nearly as important as what you evaluate. Because program funding and approval decisions often rely on the ability to compare "apples to apples," the evaluation must clearly articulate the goals of the program; how it was funded; how it was designed and implemented, and by whom; and its intended audience. Without a clear articulation of content, process, and program audience, funders and decision-makers have a difficult time determining if a program has demonstrated enough merit to receive continued funding and support. Not having and using a sound evaluation of your program may also hamper your ability to inform future legislative and regulatory policies.

Although intended as a guide for their project directors, the [W.K. Kellogg Foundation Evaluation Handbook](#) could be a good resource to consider as you construct your program evaluation.



## Outreach and Awareness



How your community learns about aging in place, reduces senior falls, and coordinates senior care is up to you. Your program and the people it serves can help educate the community about why your services are important as well as help them understand how to get involved. Although your outreach plan may take a variety of forms, it should be proactive, enabling members of the community to connect to your program goals and objectives before your services are needed, e.g., before a fall occurs. The first step in creating an outreach plan is identifying what you want to accomplish with your efforts. Goals might include increasing the visibility of senior falls prevention and the coordinated care services your program offers; building

# Senior Falls Prevention and Coordinated Care

and expanding support for aging in place policies with the community and your funders; and connecting with seniors and their caregivers/families.

Although you will need to design outreach materials that address diverse audiences, it is important to remember that seniors are one of the main stakeholders. Terminology used to describe the services offered by the program should appeal to them. For example, although “aging in place” has become common terminology for many housing and public health professionals, it may not resonate or even be understood by seniors and their families. Similarly, although “falls prevention” may be the main goal of your services, many seniors will reject such programs and interventions because they think the services are for “old people” and they do not see themselves in that category. Even families who recognize a relative is aging might not understand the value of your services until a crisis occurs. Consequently, outreach materials should be structured to resonate with your audience. For example, services could be stated as offering “independent living” and promoting “age-friendly communities” as opposed to “falls protection” or “senior care.”

Materials should clearly outline the following information: whom the program serves; what services are provided, along with any related costs; when services are provided and how frequently; where the services are offered (e.g., in-home or at a senior or community center); once you have created your outreach materials, you will need to develop a strategy to disseminate the information to key stakeholders such as funders, partners, civic organizations, and seniors and their families. Your outreach strategies should help you create a presence in the community as well as break down barriers to providing access to information needed by many seniors and their families. As feasible, ask seniors participating in your program to encourage other seniors to take advantage of the services. Have participating seniors act as “ambassadors” by talking to policy decision-makers and funders on your behalf, which will communicate how important it is to their ability to age in place and remain in the community.

Outreach strategies should be tailored to reach seniors and beyond. For example, although not all seniors use or have access to the Internet, social media such as Facebook and blogs can help you share information with younger family members, funders, elected officials, and other partners and stakeholders. Use your website to highlight success stories and provide a calendar of events with descriptions of available services such as classes. Create



brochures and newsletters that highlight your program services and activities as well as promote various partners participating in the program. Develop and maintain a database or listserv of contacts and stakeholders, and use to disseminate the newsletter or calls to action when you need stakeholder support for specific events or activities.

Remember to meet seniors where they are: if few seniors in your community use the Internet, mail documents to them; post and announce information where seniors congregate such as Community and Senior Centers, houses of Worship, and civic organization meetings; post stories local community papers. Start with strategies you and your partners are most comfortable with, and then

expand to those outside your traditional “box.” Finally, do not underestimate word-of-mouth, not only for raising awareness, but also for building support and attracting new partners.

# Senior Falls Prevention and Coordinated Care

## Partner Engagement

As your program develops, it will be important for you to review the objectives of the partnership and continually evaluate how well it is meeting your and your partners' expectations. You may need to adjust resources, partner roles, timelines or other elements of the partnership to achieve your goals. You may even need to modify your goals to reflect evolving political or funding dynamics.

Ideally, once your program has launched, you should foster a rapport with your partners and their staff members to increase understanding of the value each organization brings to the project. It might be useful to host "brown bag" lunches or webinars during which staff from the partners can provide presentations on the mission and operation of their organizations or agencies, and what they contribute to the partnership. Partner organizations could also share and provide trainings to each other on specific topics and the tools each organization uses in their senior work (e.g., how to determine what intervention(s) should be offered to meet the needs of a specific subset of seniors).

## Funding Continuity

Ensuring ongoing financial program. For example, many launched with seed money from funding sources when CDC's

The first step to ensure financial of your program, and that it goals and the needs of its target funding if you can provide program has improved the community.



stability is daunting for nearly every senior falls prevention programs CDC were challenged to find new grants ceased.

stability is verifying the effectiveness is meeting or even exceeding the audience. It is much easier to sustain supportive data that show how the health and well-being of seniors in the

Another step to ensure that funds remain available is to build a diverse partnership with access to various funding resources. You can also include some (or all) of your funders as active partners in the endeavor, if this approach is within their operating style. Although it does not guarantee funding, treating funders as project partners helps ensure they are invested in the project with more than just money.

Additionally, instead of relying solely on government funds, look for opportunities to make your program self-sustaining. For example, conduct community fundraising events, and provide fee-for-payment services to higher income seniors and use those funds to offset costs for low- to moderate-income seniors. Work with state, tribal and local legislators to make coordinated senior care a budgetary line item or to create a Senior Care Trust Fund, similar to a state or local Housing Trust Fund, in which funds are specifically earmarked for senior falls prevention and coordinated care.

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## Inform Legislative, Regulatory and Policy Change

The convergence of aging baby boomers, the high cost of healthcare and long-term care, and an inadequate supply of affordable senior housing has created an unprecedented opportunity for public health, affordable housing, and community service providers to inform and direct how senior care is managed in the U.S. As providers of community health and housing services, your insight and expertise on the functionality and cost effectiveness of senior falls prevention and coordinated care programs are essential.

Look for opportunities to provide input to critical community planning processes. For example, under ACA, tax-exempt hospitals must complete Community Health Needs Assessments (CHNA) every three years that identify critical health needs and how to work with the community to address them. Every five years, PHAs are required to submit plans to HUD that outline their policies, programs, operations, and strategies to meet local housing needs; nonqualified plans must also submit annually.<sup>18</sup> Annually, HFAs must publish Qualified Allocation Plans and consider public comments on their criteria, including services, for how funds for housing programs such as Low Income Housing Tax Credits and Mortgage Revenue Bonds will be awarded. Cities and states with Housing Trust Funds determine what services can be offered using those funds. These planning processes give public health, housing, and community development providers the opportunity to influence regulations and policies on how senior care and housing are addressed. It also presents an opportunity to engage and build relationships between and with local hospitals, housing authorities, and community nonprofits.



Additionally, your program and its outcomes will inform legislative and regulatory actions only if you partner with your local, state, and federal public health and housing officials. Become an advocate for senior falls prevention, aging in place, and senior care. Share evaluations of your program with these officials and highlight what works well with their programs and funding, and what creates barriers to your program implementation. Share your program's success stories with the media and policymakers.

Learn more about legislation and policy by reviewing the Falls Free® manual: [Advancing and Sustaining a State-Based Falls Prevention Agenda: The Role of Legislation, Policy, and Regulation](#). Stay abreast of changing policy priorities and proposals by getting involved with national organizations such as the [National Council on Aging \(NCOA\)](#), [LeadingAge](#), the [National Council of State Housing Agencies](#), and the [National Conference of State Legislatures](#).

The Appendix provides a range of additional resources to help support your aging in place and senior falls prevention partnerships.

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<sup>18</sup> Public Housing Agency Plans, U.S. Department of Housing and Urban Development. Available at [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/public\\_indian\\_housing/pha](http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/pha)

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## Resources

A Profile of Older Americans: 2014, Administration for Community Living (ACL). Available at [http://www.aoa.acl.gov/aging\\_statistics/profile/2014/docs/2014-profile.pdf](http://www.aoa.acl.gov/aging_statistics/profile/2014/docs/2014-profile.pdf)

Centers for Medicare & Medicaid Services.

PACE. Available at <https://www.medicare.gov/your-medicare-costs/help-paying-costs/pace/pace.html>

State Innovation Models Initiative. Available at <https://innovation.cms.gov/initiatives/state-innovations/index.html>.

Cost of Falls Among Older Adults. Centers for Disease Control and Prevention (CDC). Available at <http://www.cdc.gov/homeandrecreationalafety/falls/fallcost.html>

Section 202 Supportive Housing, U.S. Department of Housing and Urban Development. Available at [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/housing/mfh/progdesc/eld202](http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/mfh/progdesc/eld202)

Livable Communities, AARP Public Policy Institute. Available at <http://www.aarp.org/ppi/issues/livable-communities/>

The Henry J. Kaiser Family Foundation

Medicaid and Long-Term Services and Supports: A Primer. Available at

<http://kff.org/medicaid/report/medicaid-and-long-term-services-and-supports-a-primer/>

Preventive Services Covered by Private Insurance Plans under the Affordable Care Act

Available at <http://kff.org/health-reform/fact-sheet/preventive-services-covered-by-private-health-plans/>

Long-Term Care Insurance: Protection for your Future. The American Council of Life Insurers. Available at [https://www.acli.com/-/media/ACLI/Files/Consumer-Brochures-Public/LTCI-ConsumerBrochureUpdate\\_4-17-14.ashx?la=en](https://www.acli.com/-/media/ACLI/Files/Consumer-Brochures-Public/LTCI-ConsumerBrochureUpdate_4-17-14.ashx?la=en)

*Long-Term Services and Supports for Older Americans: Risks and Financing* (2016). Melissa Favreault and Judith Dey

Office of Disability, Aging and Long-Term Care Policy, U.S. Department of Health and Human Services. Available at <https://aspe.hhs.gov/pdf-report/long-term-services-and-supports-older-americans-risks-and-financing-research-brief>

# Senior Falls Prevention and Coordinated Care

## APPENDIX

### Home Assessment and Modification Checklists

- [Rebuilding Together Home Modification Checklist](#)
- [HUD Aging at Home: Guide for Home Improvement](#)
- [AARP Is My Home Fit](#)

### General Resources

- [National Council on Aging \(NCOA\)](#)

NCOA is a nonprofit advocacy and service organization focused on building partnerships between government, business and nonprofits to improve the lives of seniors. Through programs for seniors, services and advocacy, NCOA works to increase the visibility of challenges that aging individuals encounter on a daily basis.

### Aging in Place / Age-Friendly Communities

- [AARP Livable Communities](#)

AARP offers a vast amount of resources to help communities meet the needs of seniors interested in aging in place

— [Where We Live: Communities for All Ages \(2016\)](#)

— [Aging in Place: A State Survey of Livability Policies and Practices](#)

A joint publication with the National Conference of State Legislatures

— [Livable Communities: Toolkit and Resources](#)

AARP's series of toolkits, "how-to" guides, and online materials help community leaders create livable, age friendly communities.

- [Aging in Place Design Guidelines: For Independent Living in Multifamily Buildings](#)

A joint venture between Enterprise Community Partners and OZ Architecture

These Guidelines, along with Enterprise's Aging in Place charrette tools, checklist, and prioritization tool, supplement existing resources for sustainable, affordable housing.

- [Best Cities for Successful Aging: Programs with Purpose](#)

This summary describes innovative ways various communities are working to help seniors age in place. Examples include: an interfaith organization program in Phoenix, AZ, that connects seniors to volunteers who help with activities such as home repair projects, transportation and groceries; a senior transportation network in Portland, ME; and a program in St. Louis, MO, where seniors teach low-income children how to be healthier.

- HUD Evidence Matters

— [Aging in Place: Facilitating Choice and Independence](#)

— [Measuring the Costs and Savings of Aging in Place](#)

— [Community-Centered Solutions for Aging at Home](#)

— [Making Your Community Livable for All Ages: What's Working!](#)

# Senior Falls Prevention and Coordinated Care

This 2015 report from the National Association of Agencies on Aging (n4a) provides strategies to help communities develop effective Livable Community initiatives. The report features several examples of the steps and lessons learned from local communities moving to make their communities more age-friendly.

- [National Aging in Place Council \(NAIPC®\) News and Events](#)

This source provides information on market trends, consumer products, senior issues, legislative and regulatory updates, and other activities related to the National Aging in Place Council®. You can view newsletters by clicking on the month headline.

## Falls Prevention

### Key CDC Publications

- [Preventing Falls: A Guide to Implementing Effective Community-Based Fall Prevention Programs](#)

“How-to” guide for CBOs interested in implementing evidence-based fall prevention programs. It provides guidelines on program planning, development, implementation, and evaluation. It also provides examples of successful programs, describes resources needed to implement and sustain programs, and offers valuable tips

- [STEADI \(Stopping Elderly Accidents, Deaths & Injuries\)](#)

A tool kit for health care providers who treat seniors at risk of falling or who have fallen in the past. The Toolkit contains resources and tools to help make fall prevention an integral part of a clinical practice.

### Falls Free® Initiative

- [Falls Free® Initiative](#) is a coordinated national effort to address the growing public health issue of fall-related injuries and deaths in older adults.

- 2015 Falls Free® National Action Plan

- Describes steps that should be taken to reduce the growing number of falls and fall-related injuries among older adults. This is an updated plan which builds on the original 2005 Falls Free® National Action Plan.

- [Example of a State Action Plan \(WI\)](#)

- [State Fall Prevention Coalitions](#)

Contacts for State Fall Prevention Coalition to find a [fall prevention program](#) near and to learn about fall prevention efforts

- [National Falls Prevention Resource Center](#)

The Center serves as a national clearinghouse of tools, best practices, and other information on falls and falls prevention to raise awareness about the risk of falls and how to prevent them. The Center was by NCOA with a grant from the Administration for Community Living and is integrated with resources from the Falls Free® Initiative.

# Senior Falls Prevention and Coordinated Care

## Funding Reports

- [Staying at Home: The Role of Financial Services in Promoting Aging in Community](#)  
This 2016 report, written by staff from the National Community Reinvestment Coalition (NCRC) and published by the Federal Reserve of San Francisco, provides several examples of diverse partnerships between community development, healthcare, and financial institutions to promote healthy aging in place partnerships.
- [Medicaid Funding of Community-Based Prevention: Myths, State Successes Overcoming Barriers and the Promise of Integrated Payment Models](#)  
This 2013 report from Nemours, a nonprofit health system, clarifies some of the complex rules surrounding use of Medicare funding for preventive programs in the community.
- [On-Site Health Services at Affordable Senior Housing Properties Impact Hospital Visits and Healthcare Costs](#)  
This National Low Income Housing Coalition (NLIHC) report details how supportive health services at affordable senior housing properties can reduce hospital visits and lower healthcare costs.

## Integrated and Coordinated Care

### LeadingAge

- [LeadingAge](#) is a national nonprofit membership organization that represents the full spectrum of the aging services field.
  - [Center for Housing Plus Services](#)  
This is a LeadingAge resource center, which facilitates the development, adoption and support of innovative housing solutions to help moderate- and low-income seniors age safely in their homes and communities.
  - [Affordable Senior Housing Plus Services: What's the Value?](#)  
This 2015 report, which was produced by LeadingAge, provides supportive information that both housing and public health professionals can use to bolster the case for supportive senior services.
- [Civic Works: Cities for All Ages](#)  
This brochure outlines the comprehensive services, including home repair and safety modifications, case management, and referrals, provided by a nonprofit community organization in Baltimore, MD.
- [Integrated Care Resource Center \(ICRC\)](#)  
The ICRC was launched by CMS to help states share and learn about best practices for delivering coordinated healthcare to high-need, high-cost dual-eligible Medicare/Medicaid beneficiaries. ICRC helps states develop integrated programs that coordinate the full range of medical, behavioral health, and long-term services and supports required by dual eligible individuals. The ICRC offers both one-on-one technical assistance services and group services.
- [Medicaid Integrating Care](#)  
This resource provides information about the programs CMS is promoting to encourage states to provide Medicaid and Medicare benefits through a single delivery system. The Integrated Care model would provide quality care for dual eligible beneficiaries, improve care coordination, and lower administrative burdens.

# Senior Falls Prevention and Coordinated Care

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## Partnerships and Coalitions

- [Sample Partnership Memorandum of Understanding \(MOU\)](#)

This sample MOU demonstrates the type of details your partnership might consider including as you forge your collaborative.

- [Housing and Health Care: Partnering in Healthy Aging A Guide to Collaboration](#)

This guide was developed by LeadingAge to help housing and public health providers understand how to effectively partner to provide services to seniors.

- [A Practical Guide to State Coalition Building to Address a Growing Public Health Issue](#)

This Guide was produced by NCOA to help organizations and public health departments create senior falls prevention coalitions to promote policy and legislation at the state and national level.

- [Partnering to Promote Healthy Aging: Creative Best Practice Community Partnerships](#)

A manual developed by the National Council on the Aging (NCOA) that provides insights to aging, health, and public health services on how to build state and local level partnerships that promote healthy aging.

## Policy and Legislation Guidance

- [Advancing and Sustaining a State-Based Falls Prevention Agenda: The Role of Legislation, Policy and Regulation](#)

This document from NCOA can help state senior falls prevention coalitions understand how to influence policies, legislation, and regulations at the national and state level.

- [Keeping the Aging Population Healthy: Legislator Policy Brief](#)

This guide was developed by the Healthy States Initiative, a collaborative effort between the CDC and the Council of State Governments (CSG), to give state leaders such as legislators and health department officials information needed to make informed public health decisions.

- [State Falls Prevention Legislation](#)

This is a list of legislation and statues passed in every state compiled by the National Conference of State Legislatures (NCSL).

## Final Report Resources

- Berardo, Joseph. "Population Health Management: Best Practices for Treating Aging Patients." In *Caring*, edited by National Association of Home Care and Hospice, 6. Washington, DC: National Association of Home Care and Hospice.
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