Evidence-Based Actions to Help HUD-Assisted Older Adults Remain Healthy and Age in Their Community

Year 2 Report of the Aging in Place Interagency Agreement between the Department of Housing and Urban Development (HUD) and the Centers for Disease Control and Prevention (CDC)

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

CONTEXT AND BACKGROUND

In April 2021, the Department of Housing and Urban Development (HUD) and the Centers for Disease for Control and Prevention's (CDC) Office of Policy, Performance, and Evaluation (OPPE; then known as the Office of the Associate Director for Policy and Strategy, OADPS) established a 5-year interagency agreement (IAA) to build a collaborative relationship to leverage opportunities and resources in support of shared agency goals and priorities related to aging in place. The primary aim of the IAA period of performance is to identify sustainable, evidence-informed approaches for affordable senior housing programs that coordinate health, wellness, and supportive services to help older adults (defined for the purpose of this IAA as adults aged 62 years and older) remain healthy, age in their community, and reduce their use of costly health care services. This report details the context, methods, and results of the first two years of the IAA, on the period from April 2021 to April 2023.

Annually, HUD serves approximately 9 million individuals, close to 1.8 million of whom are older adults. In 2022, 40% of the 4.5 million households who received an annual subsidy from HUD had a head of household, co-head, or spouse who was aged 62 years or older. Older adults with low income reside in all of HUD's subsidy programs, which serve the same basic function of providing a monthly subsidy to make housing affordable to extremely low-income households. HUD's primary subsidy programs include: (1) the Housing Choice Voucher Program, (2) Public Housing Program and (3) the Multifamily Housing Program. Past and current HUD-assisted programs that specifically aim to support older adults with very low household income include, but are not limited to, the Section 202 Supportive Housing for the Elderly Program, the HUD Service Coordinator Program, the Assisted Living Conversion Program, and the Older Adult Homes Modification Program.

HUD is committed to developing innovative strategies to provide older adults who have very low income with stable, affordable housing that enables them to remain in their homes as they age. To support this goal, CDC partnered with the National Network of Public Health Institutes (NNPHI) and the Georgia Health Policy Center (GHPC) in Georgia State University's Andrew Young School of Public Health to identify evidence-informed policies and practices related to aging in place, and offer guidance about what is most needed, relevant, and immediate for HUD-assisted older adult tenants at this time.

METHODS

We used four methods of inquiry to characterize and understand the evidence from published intervention literature, systematic reviews, CDC subject matter expert (SME) interviews, and health data on older adults. Through consideration of the intervention evidence, the health risk evidence, and subject matter expertise, we identified four avenues for potential evidence-based actions: (A) Physical Housing Standards and/or Enhancements, (B) Healthcare System Interventions and Partnership Opportunities, (C) Programs and Services HUD Could Offer or Partner to Provide, (D) Existing Community Characteristics and Services. Each avenue contained between two and nine specific evidence-based interventions.

CONTEXTUAL CONSIDERATIONS

Given the diversity of health factors that likely contribute to aging in place, multiple interventions or avenues may be needed to support HUD's priority for this population. SMEs noted the importance of considering:

- Gaps in the available evidence and opportunities for future research,
- The potential for "multisolving" interventions that could address multiple health issues,
- Potential innovations in identification and amelioration of risk and connection to the health system,
- Barriers to program participation, such as perceived value, transportation, affordability, the "digital divide," and the perception that some older adult health issues are not preventable,
- Critical implementation supports (e.g., training and technical assistance) to support fidelity,
- The possible impact on health equity and unintended consequences of interventions, and
- Other local, state, and federal agency partnerships to support implementation and sustainability.

KEY FINDINGS: AVENUES FOR POTENTIAL EVIDENCE-BASED ACTION TO IMPROVE THE HEALTH OF OLDER ADULTS SERVED BY HUD PROGRAMS

The two avenues with the strongest published and contextual evidence to support their consideration for possible action by HUD and partners from the health system, communities, and other federal agencies are:

- **Healthcare System Interventions and Partnership Opportunities** for management of existing chronic health conditions among older adults and reduce risk for falls, and
- **Programs and Services HUD Could Offer or Partner to Provide** to promote health and reduce the risk of chronic physical and mental health conditions that contribute to transitions out of independent living.

Among the identified **Healthcare System Interventions and Partnership Opportunities**, the specific interventions with systematic review evidence on key health outcomes to support older adults' aging in place were:

- Case-managed Care for Community-Dwelling Frail Elders or Integrated Long-term Care for Community-dwelling Frail Elders, Chronic Disease Management Programs,
- Risk Assessments & Personalized Approaches to Fall Prevention among Older Adults or Multi-component Fall Prevention Interventions for Older Adults,
- Team-based Care to Improve Blood Pressure Control, and
- Home-Based Depression Care Management.

Of the identified **Programs and Services HUD Could Offer or Partner to Provide for HUD Residents**, the specific interventions had systematic review evidence on key health outcomes to support older adults' aging in place were:

- Service-enriched Housing,
- Interventions Engaging Community Health Workers or Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk, and
- Activity Programs for Older Adults.

The other two avenues for potential action (Physical Housing Standards and/or Enhancements, and Existing Community Characteristics and Services) appear to have less potential for effectiveness based on current evidence. Further research or exploration might be valuable to identify which specific physical standards, enhancements, or characteristics of housing and communities support aging in place among older adults.

Evidence-Based Actions to Help HUD-Assisted Older Adults Remain Healthy and Age in Their Community

Context for the Evidence Review

In April 2021, the Department of Housing and Urban Development (HUD) and the Centers for Disease Control and Prevention's (CDC) Office of Policy, Performance, and Evaluation (OPPE; then known as the Office of the Associate Director for Policy and Strategy, OADPS) established a 5-year interagency agreement (IAA) to build a collaborative relationship to leverage opportunities and resources in support of shared agency goals and priorities related to aging in place. The primary aim of the IAA period of performance is to identify sustainable, evidence-informed approaches for affordable senior housing programs that coordinate health, wellness, and supportive services to help older adults (i.e., adults aged 62 years and older) remain healthy, age in their community, and reduce their use of costly health care services. The broader vision beyond the IAA is an ongoing, collaborative partnership between HUD, CDC, and other agencies to intentionally advance shared priorities related to health and housing. More information about the Purpose, Tasks, and Deliverables of the IAA are provided in Appendix A.

.The specific goals set forth in the IAA were to:

- Identify evidence-informed policies and practices related to aging in place.
- Narrow the scope to what is needed, relevant and immediate for HUD-assisted tenants at this time.
- Convene HHS and HUD partners to explore opportunities to align the array of existing HHS collaborations and investments to increase access to community and clinical services for wellness and care coordination for low-income older adult populations.
- Convene Department of Health and Human Services (HHS) and HUD to jointly assess learnings from environmental scans, convening, and interim findings from the Integrated Wellness in Supported Housing (IWISH) demonstration to inform future directions for scaling aging-in-place models in HUD-assisted housing.
- Inform the design, research questions, and evaluation for HUD to develop, implement, and evaluate pilot tests based on research design in HUD sites; and
- Identify appropriate ways to scale-up evidence-informed policies and practices to improve the health of the nation's low-income population.

The focus of the HUD-CDC collaboration begins with, but will not be limited to, the nation's older adult population. This report details the context, methods, and results of the first two years of this agreement (from April 2021 to April 2023) in service of the first two goals of the IAA: identify evidence-informed policies and practices related to aging in place; and narrow the scope to what is needed, relevant, and immediate for HUD-assisted tenants.

OLDER ADULTS, POVERTY, & HEALTH

Nearly 56 million people aged 65 and over live in the U.S., representing almost 17% of the total population in 2021 (US Census Bureau, n.d.). This proportion is expected to grow to over 21% by 2040 (Administration for Community Living (ACL), 2021). While the poverty rate within this group declined in the past fifty years, the number of older adults experiencing poverty increased, growing from 3.1 million to 5.8 million since 1974 (Congressional Research Service, 2022). Among older adults, people living alone faced higher rates of poverty than those living with families; Hispanic and African American women who lived alone saw the highest poverty rates among older adults (ACL, 2021). The distribution of poverty varies by geography as well. In 2018, the Kaiser Family Foundation reported on the percent of people aged 65 years and older in each of the 50 US states and Washington, D.C.; percentages ranged from 5.9% to 15.5% based on the official poverty measure, and from 6.9% to 27.3% based on the supplemental poverty measure (Cubanski et al., 2018). As with other age groups, older individuals with lower incomes are at higher risk for functional limitations, compared to those with higher incomes (Minkler et al., 2006).

HOUSING AND HEALTH

A 2018 *Health Affairs* policy brief provided an overview of the literature on housing and health (Taylor, 2018), concluding that strong evidence exists for the effects of housing on health outcomes and health care costs. Four pathways were characterized connecting housing and health. The Stability pathway is based on evidence showing the detrimental health outcomes of not having stable housing (and thus the health benefits of having stable housing). The Affordability pathway describes the impact of housing on health in the context of a family's income needing to cover housing costs and other health promoting and healthcare expenditures – thus, when a family has to spend more for adequate housing, less household income is available for other needs. HUD's primary mission of providing affordable housing addresses both of those pathways directly. The remaining two pathways involve safety and quality of housing and the neighborhood in which people live. Evidence for interventions in both of those pathways are considered in this review, in addition to the contributions of health-specific interventions.

HUD-ASSISTED OLDER ADULT POPULATION AND SERVICES

HUD programs can be broadly classified into two categories: project-based and tenant-based housing. In project-based housing, the subsidy is tied to a physical unit. HUD programs that are project-based include the public housing program and a variety of Multifamily Housing programs, such as Project Based Section 8, Section 811, and Section 202. In HUD's sole tenant-based housing program, the Housing Choice Voucher program, the subsidy is tied to the household. The Housing Choice Voucher program is thus unique to the other HUD programs in that Housing Choice Voucher households can enter the private housing market and have a greater choice in terms of the unit they select to rent.

Project-based programs

- The **Public Housing Program** provides decent and safe rental housing for eligible low-income families, the elderly, and persons with disabilities.
- The **Multifamily Housing Program** facilitates the construction, substantial rehabilitation, purchase, and refinancing of multifamily properties and administers subsidized housing programs that provide rental assistance to low-income families, the elderly, and those with disabilities, as well as the preservation and recapitalization of assisted affordable housing.

Tenant-based program

- The **Housing Choice Voucher Program** allows families with very low income to choose and lease or purchase safe, decent, and affordable privately owned rental housing.

The populations of interest specified in the IAA are older adult populations with very low income served by HUD residing in multifamily or single-family housing, whether private market or federally subsidized. According to data from HUD administrative databases (Public and Indian Housing (PIH) Information Center (PIC) and the Tenant Rental Assistance Certification System (TRACS)), HUD provided annual rental assistance to 1.8 million older adult households in 2022. Almost half (47%) of these households have one or more heads of household with a disability, and 3.1% of households contain one or more other members who have a disability. The percentage of HUD households with a head of household, co-head, or spouse who was aged 62 years or older has risen over time, from 33% in 1996 to 40% in 2022. Forty-three percent of HUD older adult households in 2022 had been in HUD-assisted housing for more than 10 years. The median income for older adult residents in 2022 was $11,964.

For the purposes of this report, HUD-assisted programs for older adults with very low household income include a varied set of programs that fall mainly within HUD's Multifamily Housing Programs and the Office of Healthy Homes and Lead Hazard Control. Specific programs include, but are not limited to:

Multifamily Housing Programs

- Section 202 Supportive Housing for the Elderly Program, which provides capital advances to finance the construction, rehabilitation, or acquisition with or without rehabilitation of structures that will serve as supportive housing for very low-income elderly persons, including the frail elderly, and provides rent subsidies for the projects to help make them affordable
- HUD Service Coordinator Program, which provides funding for the employment of Service Coordinators (i.e., a social service staff person hired or contracted by the owner or management company) in insured and assisted Multifamily Housing designed for the elderly and persons with disabilities
- Assisted Living Conversion Program, which provides private, nonprofit owners of eligible developments with a grant to convert some or all of the dwelling units in the project into an Assisted Living Facility or Service-Enriched Housing for elderly residents aging in place; this program is not currently funded to support new awards, but previously funded projects continue to serve current residents

Office of Healthy Homes and Lead Hazard Control

- Older Adult Homes Modification Program, which assists experienced nonprofit organizations, state and local governments, and public housing authorities in undertaking comprehensive programs that make safety and functional home modifications and limited repairs to meet the needs of low-income elderly homeowners

HUD publications have documented the health challenges faced by the older adult population served. For example:

- A Health Picture of HUD-Assisted Adults, 2006–2012 was an analysis of linked administrative records from HUD adult and older-adult assisted housing and data from the National Center for Health Statistics' National Health Interview Survey. More than one-third of HUD-assisted adults in this study **reported their health as either fair or poor**, a proportion considerably higher than among unassisted renters with low income and the general adult population. The majority of HUD-assisted adults represented by these data **were overweight or obese** and more than one-half of them **lived with a disability** at the time of their health interview. Relative to unassisted renters with low income and the general adult population, HUD-assisted adults reported greater prevalence for all included 10 health conditions and diagnoses, **including serious chronic ailments such as heart disease, diabetes, and asthma.**
- Picture of Housing and Health: Medicare and Medicaid Use among Older Adults in HUD-Assisted Housing presented analyses of linked administrative records from HUD older adult assisted housing and data from Medicare/Medicaid claims in 12 jurisdictions across the country in 2008. HUD-assisted Medicare/Medicaid Enrollees (MMEs) in this analysis had **more chronic conditions** (55% of HUD-assisted MMEs had 5 or more compared to 43% of unassisted MMEs), which translated into **higher health care utilization and costs** than unassisted MMEs in the community.

HUD's priority for the approximately 1.8 million older adults they serve annually is to provide stable, affordable housing that enables individuals to remain in their homes as they age. Based on this priority, HUD seeks to focus on preventing transitions out of the community setting and into institutional settings. To support this priority, CDC partnered with the National Network of Public Health Institutes (NNPHI) and the Georgia Health Policy Center (GHPC) in Georgia State University's Andrew Young School of Policy Studies to identify evidence-informed policies and practices related to aging in place, and offer guidance about what is most needed, relevant, and immediate for HUD-assisted older adult tenants at this time.

METHODS

We used four separate methods of inquiry (Figure 1) in service of identifying evidence-based actions that HUD and partners could take to address the most critical health threats to older adult residents' ability to remain in their communities as they age. These four methods were pursued sequentially, with the results of each informing the next stage.

LITERATURE REVIEW AND ENVIRONMENTAL SCAN

The first method of inquiry was intended to identify the available evidence for effective programs, policies, and practices that support healthy aging in place. GHPC first conducted a broad literature review using search terms related to housing, aging, and health. The search was restricted to English-language articles published in the past ten years on US-focused studies. The searches were conducted in PubMed, AgeLine, Web of Science, ProQuest Social Services, and Google Scholar, and resulted in 179 unique articles. Relevant interventions published outside of scientific journals were also identified by an environmental scan of key websites, including CDC, HHS, HUD, the National Council on Aging (NCOA), Administration for Community Living (ACL), and the Aging and Disability Business Institute (ADBI). From the set of retrieved published and unpublished sources, a total of 147 interventions relevant to older adult health were identified. The project team extracted narrative information on each intervention, including descriptions of the intervention, population, type of intervention, and tested health outcomes.

REVIEW OF SYSTEMATIC EVIDENCE REVIEWS

To complement information from the environmental scan and identify the interventions with the most robust evidence base, the second method of inquiry involved reviewing websites that provide recommendations pertaining to evidence-based health promotion interventions. NCOA's Evidence-Based Program search tool and ACL's Aging and Disability Evidence-Based Programs and Practices initiative provide listings of specific evidence-based intervention programs. The Community Preventive Services Task Force ("Community Guide") and County Health Rankings & Roadmaps (CHR&R) What Works for Health from the University of Wisconsin Population Health Institute provide results of systematic reviews of broader categories of intervention approaches. We identified for inclusion the interventions that directly address or could support aging in place in a community-based setting, align with **HUD's mission**, and target adults. In many cases, the intervention programs listed on the NCOA and ACL registries were examples that would be subsumed in the broader intervention categories reviewed in the Community Guide and CHR&R reviews. In total, we reviewed 31 broad intervention categories and 8 other specific intervention programs. From the relevant programs and approaches, the project team extracted narrative information regarding the level of evidence, the population served, and the documented health outcomes.

INTERVIEWS WITH CDC SUBJECT MATTER EXPERTS

As a third method of inquiry, GHPC conducted subject matter expert (SME) interviews to elicit contextual and implementation expertise, identify gaps in the evidence, and identify emerging evidence and opportunities for innovation. Prior to the interviews, SMEs were provided with background information regarding the IAA and a spreadsheet of information regarding the interventions with a high level of systematic review evidence pertaining to their areas of expertise. The full interview guide is presented in Appendix B. Semi-structured interviews were one hour each in length, conducted via Zoom by an

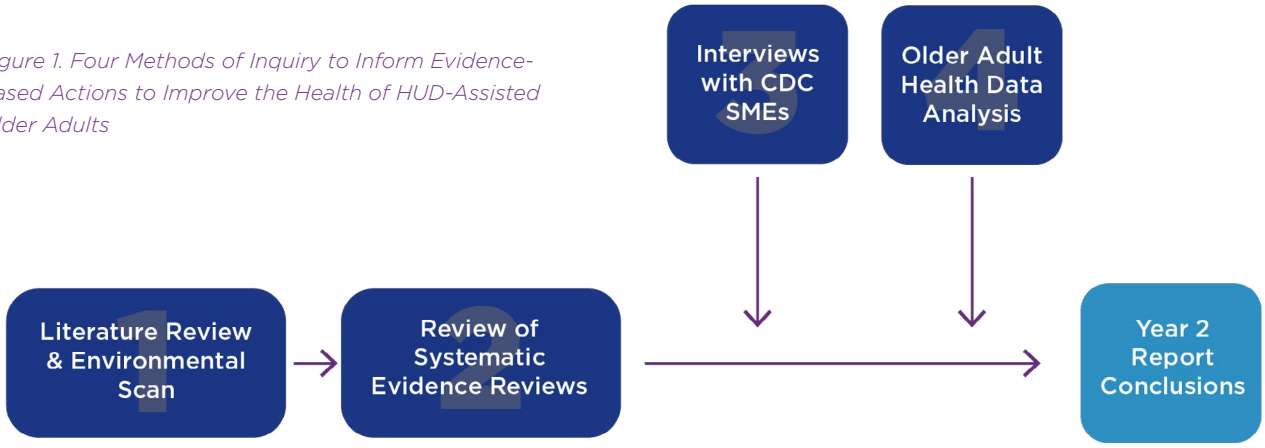

Figure 1. Four Methods of Inquiry to Inform Evidence-Based Actions to Improve the Health of HUD-Assisted Older Adults

experienced facilitator from the GHPC. Staff from NNPHI and CDC attended the interviews as schedules allowed. A total of nine interviews were conducted with CDC SMEs between April 2022 and January 2023. In addition, one SME's Division submitted comments via email in response to the discussion guide. The list of SME topics and names are provided in Appendix C.

Six members of the GHPC team, including the facilitator, participated in data analysis. All interviews were recorded with permission from the interview participants, submitted to a third-party transcription service, coded following published approaches for qualitative data (DeCuir-Gunby et al., 2011; Marshall & McCulloch, 2011; Lincoln & Guba, 1985; MacQueen, et al., 1998; Ryan & Bernard, 2003), and analyzed using the software package NVivo 12 (Lumivero, 2017). When seven of the interviews were complete, a member of the analysis team drafted an initial set of data-driven codes drawn from the transcripts and shared the information with the team for feedback. Through conversations among the analysis team, the initial codes and definitions were edited, and additional structural codes were added. Using the a priori codes, the analysis team coded one interview transcript. The analysis team met to review areas with lower levels of agreement (based on an NVivo coding comparison query) and identify areas for codebook revision.

Each interview transcript and the written comments were then reviewed and independently coded by two members of the analysis team. The GHPC team met to discuss the key research questions, ideas for the next steps in the analysis, and feedback regarding draft cross-cutting themes. Two team members divided the research questions and determined initial codes for reviewing themes and completed the analysis with the support of two additional team members. The themes were collaboratively developed by the four team members using a digital form of the cutting and sorting technique (Lincoln & Guba, 1985; Ryan & Bernard, 2003). The themes were organized, summarized, and presented with selected key research questions framing the results section.

OLDER ADULT HEALTH DATA ANALYSIS: IDENTIFYING HEALTH CONDITION PREDICTORS OF HOUSING TRANSITIONS

To provide additional information for using in prioritizing potential actions, CDC sought to identify significant health condition predictors of transitioning from independent living to assisted living, as a fourth method of inquiry. Waidmann and Thomas (2003) reported analyses of this type based on data from the 1992-1998 waves of the Medicare Current Beneficiary Survey (MCBS), which is a multi-stage probability sample from 107 sampling units representing the 50 U.S. states, the District of Columbia, and Puerto Rico. More information about the MCBS can be found elsewhere (Centers for Medicare & Medicaid Services (CMS), 2021). The sample is constructed to represent the entire beneficiary population and the populations in each of seven age groups. The analyses of greatest relevance for our project were the multivariate analyses predicting transitions out of independent living from respondent health conditions; results were presented separately in that report for transitions into nursing homes and transitions into other assisted living facilities.

We sought to conduct similar analyses using more recent MCBS data (2015–2019), with two changes. We analyzed risk for any transition out of independent living (i.e., to nursing home or assisted living), and we included only participants who were dually eligible for Medicare and Medicaid to more closely resemble the HUD-assisted population. As in Waidmann and Thomas (2003), we included the following health condition variables in the multivariate model: Alzheimer's disease, broken hip, cancer, diabetes, emphysema, heart disease (including myocardial infarction, angina pectoris, or any other heart conditions), "mental retardation," osteoarthritis (non-rheumatoid arthritis), paralysis, Parkinson's disease, psychiatric/mental disorders, rheumatoid arthritis, and stroke. We calculated the percent of individuals in the dual-eligibility sample with each condition, to estimate how many dually eligible adults are affected by each condition. We also used a Cox proportional hazards model to estimate risk of transition into a nursing home or assisted living facility of each condition, holding other variables in the model constant (including other health conditions, age, gender, race/ethnicity, income, education, family structure, US region, rurality, and numbers of Activities of Daily Living, Instrumental Activities of Daily Living, and Functional Limits). To guide our decision-making, we focused on health conditions with resultant hazard ratios ≥ 1.20 (i.e., a 20% increase in risk of transition associated with having that condition) as potentially meaningful contributors to our deliberations. Because hazard ratios do not take into account the underlying population prevalence of a condition, we used hazard ratios and prevalence of the health conditions in the sample to inform prioritization of interventions.

RESULTS

LITERATURE REVIEW AND ENVIRONMENTAL SCAN

Our review and discussion of the extracted data from the first method of inquiry, the literature search and environmental scan, revealed that although there are interventions specifically intended to support older adults with low income as they age in the community (e.g., HUD's **Integrated Wellness in Supportive Housing (IWISH) demonstration**), there is also a sizable literature on interventions that may improve health or prevent impairment in older adults such that they can live independently longer. However, that literature comprises a wide range of intervention types, populations studied, and health outcomes for which the interventions show efficacy or effectiveness. For example, some interventions focus on very specific populations and health outcomes (e.g., glycemic index among individuals with Type 2 diabetes), while others aim to influence more distal outcomes in a larger population (e.g., availability of fruits and vegetables in the community). This variability limits comparisons or prioritizations across the 147 intervention studies identified in the literature search and environmental scan.

REVIEW OF SYSTEMATIC EVIDENCE REVIEWS

In absence of adequate time and resources to conduct an empirical meta-analysis of intervention effects (which would allow for comparison of a wide range of outcomes), we progressed to our second method of inquiry and examined findings from the four existing evidence-based review websites: Community Guide, CHR&R, ACL, and NCOA. Two of those four review rubrics assign a level of evidence label to intervention approaches, based on the quality of available research and strength of outcomes. As we sought to identify evidence-based approaches, we considered only relevant interventions that were rated in the top two tiers of evidence: Recommended (strong) or Recommended (sufficient) by Community Guide, or Scientifically Supported or Some Evidence by CHR&R. This filtering resulted in 24 broad categories of interventions with sufficient/some or strong evidence pertinent to the health of older adults. However, this shorter list of 24 interventions with systematic review evidence still reflected a variety of interventions, populations, and health outcomes (Tables 1a and 1b). We thus sought additional implementation and contextual information to guide decision-making.

Table 1a. Interventions Relevant to Older Adult Health with Systematic Review Evidence Rated "Recommended (Strong Evidence)" by Community Guide or "Scientifically Supported"

Intervention and Link to Evidence Summary	Intervention Type and Description	Evaluated Population	Evaluation Outcomes
Activity Programs for Older Adults	Programs offer educational, social, creative, musical, or physical activities in group settings that encourage personal interactions, regular attendance, and community involvement	Older adults	Health outcomes Mental health Isolation Quality of life
Alcohol Brief Interventions	Health care providers, trained counselors, social workers or others provides information and increases motivation to change or prevent problematic alcohol consumption through screening, feedback on clients' behavior, and advice and decision-making support	Adolescents and adults	Alcohol use Excessive drinking Underage drinking Alcohol-related harms
Case-managed Care for Community-Dwelling Frail Elders	Health professionals, often nurses, manage multiple aspects of patients' long-term care, including status assessment, monitoring, advocacy, care planning, and linkage to services, as well as transmission of information to and between care providers	Older adults with complex health needs	Nursing home use Hospital utilization Day-to-day functioning
Chronic Disease Management Programs	Multi-component efforts that include planned health care visits to teach patients about their disease, coach them on healthy behavior change including medication adherence, and skills for self-management of chronic conditions in partnership with a coordinated, multidisciplinary care team	Adults with chronic health conditions	Quality of life Health outcomes Mental health Hospital utilization
Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk	Trained providers in clinical or community settings work directly with program participants for at least 3 months through counseling, coaching, and extended support related to diet and physical activity	People at increased risk of type 2 diabetes	New-onset diabetes Overweight High blood glucose High blood pressure Abnormal lipid profile
Complete Streets & Streetscape	Improvements to streetscape design, including increased street lighting, enhanced street landscaping and street furniture, increased sidewalk coverage and connectivity of pedestrian walkways, bicycling infrastructure, street crossing safety features, and traffic calming measures	Communities	Physical activity Pedestrian and cyclist safety
Creation of or Enhanced Access to Places for Physical Activity Combined with Informational Outreach Activities and Places for Physical Activity	Changing the local environment to create opportunities for physical activity, such as creating walking trails, building exercise facilities, or providing access to existing nearby facilities	Communities	Physical activity Physical fitness
Health Insurance Enrollment Outreach and Support	Assistance in completing and submitting insurance applications to individuals whose employers do not offer affordable coverage, who are self-employed, or unemployed with health insurance needs	Communities	Health insurance coverage

Intervention and Link to Evidence Summary	Intervention Type and Description	Evaluated Population	Evaluation Outcomes
Healthy Home Environment Assessments	Home visitors, often community health workers (CHWs), similarly trained asthma outreach workers, other professionals, paraprofessionals, or volunteers assess and remediate environmental health risks within the home	Families affected by asthma	Exposure to allergens Hospital utilization Health outcomes
Home Visits to Increase Vaccination Rates	Home visitors assess clients' vaccination status, discuss the importance of recommended vaccinations, and either provide vaccinations to clients in their homes or refer them to other services	Adults and children	Vaccination rates
Home-Based Depression Care Management	Trained depression care managers conduct active screening for depression, case management, and treatment supervised by a psychiatrist	Older adults	Short-term depression outcomes
Housing Rehabilitation Loan & Grant Programs	Providing funding to repair, improve, or modernize dwellings, and remove health or safety hazards from those dwellings	Families with low and medium incomes	Housing conditions Health outcomes Mental health
Integrated Long-term Care for Community-dwelling Frail Elders	A multidisciplinary team of professionals working collaboratively to meet the full range of patient needs	Older adults with complex health needs	Hospital utilization Day-to-day functioning Nursing home use Caregiver satisfaction
Individually-Adapted Physical Activity Behavior Change Programs and Individually-Adapted Physical Activity Programs	Programs that teach behavioral skills such as goal-setting and self-monitoring of progress, building social support for new behaviors, behavioral self-reinforcement, structured problem solving to maintain behavior change and prevention of relapse into sedentary behavior	Adults and children	Physical activity Physical fitness
Interventions Engaging Community Health Workers*	Community health workers (including *promotores de salud*, community health representatives, community health advisors, and others) serve as a bridge between underserved communities and healthcare systems by providing culturally appropriate education, offering social support and informal counseling, connecting people with services, conducting blood pressure screening, and referring to healthcare for other screenings	Adults at increased risk for cardiovascular disease, type 2 diabetes; Adults with type 2 diabetes	Blood pressure Cholesterol levels Physical activity, Healthful eating habits Smoking cessation Glycemic control Lipid control Healthcare use Weight-related outcomes Colorectal screening Breast cancer screening Cervical cancer screening
Mixed-use Development	Mixed-use development supports a combination of land uses, creating communities with high densities that incorporate places to work, shop, or play within residential areas.	Communities	Physical activity
Multi-component Fall Prevention Interventions for Older Adults	Health care providers, such as primary care physicians and physical therapists, deliver a fixed, multi-component set of fall prevention interventions to older adults living in community settings	Older adults	Falls

Intervention and Link to Evidence Summary	Intervention Type and Description	Evaluated Population	Evaluation Outcomes
Risk Assessments & Personalized Approaches to Fall Prevention among Older Adults	Health professionals such as registered nurses or physicians conduct functional, balance, gait, and/or exercise assessments and provide multi-component interventions designed to reduce their fall risk (e.g., balance, strength, and endurance training; home or environmental modification; medication management; education; and/or vitamin D supplementation)	Older adults	Falls
Team-based Care to Improve Blood Pressure Control	Multi-disciplinary care team provide process support and share responsibilities of blood pressure control to complement the activities of the primary care provider, including medication management, patient follow-up, and adherence and self-management support	Adults with high blood pressure	Systolic and diastolic blood pressure

Table 1b. Interventions Relevant to Older Adult Health with Systematic Review Evidence Rated "Recommended (sufficient evidence)" by Community Guide or "Some Evidence" by CHR&R

Intervention and Link to Evidence Summary	Intervention Type and Description	Evaluated Population	Evaluation Outcomes
Community-based Digital Health and Telephone Interventions to Increase Healthy Eating and Physical Activity	Websites, mobile apps, text messages, emails, or one-on-one telephone calls provide interventions such as coaching, counseling, self-monitoring, goal setting, social support, educational tools and resources, motivation strategies, and computer-generated feedback.	Adults	Healthy eating Physical activity
Home-delivered and Congregate Meal Services for Older Adults	Home-delivered meal services or congregate meal services provided in group settings, such as senior centers, that give older adults the opportunity to socialize	Older adults living independently	Malnutrition
Intensive Lifestyle Interventions for Patients with Type 2 Diabetes	Ongoing counseling, coaching, or individualized guidance to patients to help them change their diet, level of physical activity, or both	Adults with type 2 diabetes	Glycemic control Risk factors for cardiovascular disease
Physical Activity: Digital Health Interventions for Adults 55 Years and Older	Web-based coaching, telephone sessions with intervention providers, automated messages and reminders, print materials, and/or apps deliver guidance and support that is tailored to individuals' activity level, age, and health status	Older adults	Physical activity
Service-enriched Housing	Permanent, basic rental housing in which social services are available onsite or by referral through a supportive services program or service coordinator	Families with low incomes, older adults, people with disabilities, veterans	Homelessness Housing stability Hospital utilization

***The Community Guide has reviewed different sets of Interventions Engaging Community Health Workers. Outcomes listed in the table are for Recommended (strong) and Recommended (sufficient evidence) reviews.**

SME INSIGHTS ABOUT THE INTERVENTIONS WITH SYSTEMATIC REVIEW EVIDENCE

Interviews with CDC SMEs (our third method of inquiry) provided additional information about the set of 24 interventions with systematic review evidence. Key SME insights related to the findings above are summarized here; a longer report of SME interview response themes is provided in Appendix D. In general, SME respondents agreed that the interventions with systematic review evidence do represent the interventions with strongest evidence for health outcomes in this population. However, many cautioned that implementation fidelity and reach of those interventions can be a significant challenge in real-world settings, and recommended against assuming that all programs within an intervention category are equally well implemented or effective. They noted the importance of having critical implementation supports (e.g., training and technical assistance) for intervention success. The older adult falls prevention SMEs also noted that effective falls prevention interventions assess an individual's risk for falls (e.g., incorporating health factors such as strength, vision, and current medications and environmental factors such as accessibility within the home) and identifies the specific falls prevention activities indicated by the results of an assessment. They cautioned that although efforts to build strength and balance in the whole population of older adults might have a small effect on individual risk, individualized interventions are critical in effective fall prevention due to the wide range of potential causes of falls (e.g., medication, eyesight, strength, physical hazards, etc). SMEs in more than one area pointed out that although evidence is emerging for interventions provided virtually (e.g., via telehealth), older adults may have difficulty or reluctance in accessing the necessary modes of technology to enable full value of that intervention mode. Similarly, SMEs highlighted other potential challenges to participation of older adults with low income in in-person services, including transportation and walkability, affordability of services, and perceptions among some individuals that health issues (e.g., falls) are an "inevitable" part of the aging process and thus prevention is not possible.

A second major theme across interviews was that the interventions with systematic review evidence are not the only interventions they would recommend for consideration in this effort. Three SME interviews referred us to additional sources of evidence-based interventions, including CDC's Compendium of Effective Fall Interventions (Burns et al., 2022), and Community Guide's recommendations on regulating alcohol sales outlet density in communities (Task Force on Community Preventive Services, 2009), commercial host liability policies (Rammohan et al., 2011), and park, trail, and greenway infrastructure interventions combined with additional interventions to increase physical activity (Community Preventive Services Task Force, 2022). SMEs also offered ideas for potential innovations that might improve the effectiveness of the evidence-based interventions. The falls SME interview noted that Emergency Medical Services (EMS) are often called to respond to a fall that does not result in transport to the hospital. EMS staff might be able to conduct falls risk assessment and/or referral in those situations. Health-related professions other than primary care and hospital providers were also suggested for engagement in screening, assessing, referring, or caring for older adults in HUD housing, including pharmacists, optometrists and ophthalmologists, and public health departments. SMEs similarly noted that the systematic review evidence base alone might not fully address health equity considerations, the needs of caregivers of older adults, or the challenges specifically faced by those living in rural areas, tribal nations, or territories. They also recommended that, if possible, the voice of the affected community be incorporated into these deliberations.

A third key theme from SMEs involved the perspective that other local, state, and federal agencies have a role to play in supporting the health of older adults in HUD housing. For example, Area Agencies on Aging, existing senior centers, neighborhood associations, and faith-based organizations could be valuable partners in local implementation and sustainability. National not-for-profit (e.g., Alzheimer's Association) and professional organizations could offer expertise and other partnership support. Specific federal agency programs mentioned included the Health Resources and Services Administration's (HRSA) Federally Qualified Health Centers, the Substance Abuse and Mental Health Services Administration's (SAMHSA) mental and behavioral health treatment programs, CMS's Medicare annual wellness visits, and ACL's resources to support the needs of older adults and people with disabilities.

Finally, SME responses also offered suggestions for interventions that may impact more than one priority health outcome, beyond the documented outcomes in the systematic reviews. For example, interventions that increase physical activity of older adults within a group setting (e.g., at senior centers) may also provide participants with social interaction that could be protective against loneliness and depression. Similarly, some interventions to build strength and balance among older adults may also increase their physical activity (and vice versa). Although SMEs tended to have deep expertise in particular health areas, each interview also indicated the importance of considering the whole person and the whole community.

OLDER ADULT HEALTH DATA ANALYSIS: IDENTIFYING HEALTH CONDITION PREDICTORS OF HOUSING TRANSITIONS

From our fourth method of inquiry, analyses of the MCBS data from 1558 dually eligible older adults provided results to inform prioritization of health outcomes, to further narrow down interventions. Of the 15 health conditions in the MCBS analysis, 6 health conditions were deemed the highest priority health conditions for our considerations based on the potential value of different evidence-based interventions. High blood pressure and diabetes were considered higher risk and higher prevalence (each reported by >40% of the sample) conditions; stroke was considered higher risk and moderate prevalence (reported by 16% of the sample); and Alzheimer's disease, psychiatric conditions, and broken hip were considered higher risk and lower prevalence (each reported by <5% of the sample). We used these potential outcome measures to further distinguish the potential value of interventions within the groups defined by implementation strategy.

SYNTHESIS OF RESULTS FROM THE FOUR METHODS: AVENUES FOR POTENTIAL EVIDENCE-BASED ACTION

Examination of the 24 different interventions with systematic review evidence revealed groups of interventions with similar approaches to how and where the interventions are implemented. We identified four potential groups of interventions with similarity of implementing agency/organization and location:

1. One group of interventions focuses on the physical characteristics of housing units.
2. A second group of interventions requires implementation by credentialled healthcare professionals and would typically only be provided in healthcare locations (or via telehealth by healthcare professionals).
3. A third group of interventions could be delivered by HUD directly or in partnership with community organizations for older adults who live in HUD-assisted housing, either in project-based housing (i.e., public housing or multi-family housing) or in other nearby locations in the community.
4. The fourth group includes services or structures that already exist in some communities that could enhance the health of older adult HUD-assisted residents in those communities

Figure 2 displays the four implementation strategy groups, hereafter referred to as "avenues for potential evidence-based action."

Figure 2. Avenues for Potential Evidence-Based Action to Support Aging in Place Among HUD-Assisted Older Adults

Table 2 displays the specific evidence-based interventions and documented health outcomes within the four avenues for potential action. These avenues are not necessarily mutually exclusive; for example, Activity Programs for Older Adults (e.g., "senior centers") already exist in some communities and could be implemented by HUD and community partners where they do not already exist. The resulting four avenues contained between 2 and 9 interventions in each group, with a range of different health outcomes in each (see Table 2), suggesting that further prioritization of intervention options within each group could be valuable for informing decision-making. Thus, we next incorporated our learnings from the CDC SME interviews and the health condition predictor data analysis to aid understanding of the potential relative value of different approaches to supporting aging in place.

Table 2. Avenues for Potential Evidence-Based Actions to Support Aging in Place

Evidence-Based Interventions, by Avenue for Potential Action		Health Outcomes
A. Physical Housing Standards and/or Enhancements	Healthy Home Environment Assessments	Exposure to allergens Hospital utilization Health outcomes
	Housing Rehabilitation Loan & Grant Programs	Housing conditions Health outcomes Mental health
B. Healthcare System Interventions and Partnership Opportunities	Case-managed Care for Community-Dwelling Frail Elders or Integrated Long-term Care for Community-dwelling Frail Elders [such as CMS's Program of All-Inclusive Care for the Elderly]	Nursing home use Hospital utilization Day-to-day functioning Caregiver satisfaction
	Chronic Disease Management Programs	Quality of life Health outcomes Mental health Hospital utilization
	Medicare-covered Risk Assessments & Personalized Approaches to Fall Prevention among Older Adults or Multi-component Fall Prevention Interventions for Older Adults	Falls
	Team-based Care to Improve Blood Pressure Control	Systolic and diastolic blood pressure
C. Programs and Services HUD Could Offer or Partner to Provide	Home-Based Depression Care Management	Short-term depression outcomes
	Service-enriched Housing	Homelessness Housing stability Hospital utilization
	Interventions Engaging Community Health Workers or Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk	Blood pressure Cholesterol levels Physical activity Healthful eating habits Smoking cessation Glycemic control Lipid control Healthcare use Weight-related outcomes Colorectal screening Breast cancer screening Cervical cancer screening
	Activity Programs for Older Adults	Health outcomes Mental health Isolation Quality of life
	Home-delivered and Congregate Meal Services for Older Adults	Malnutrition
	Physical Activity: Digital Health Interventions for Adults 55 Years and Older	Physical activity
	Home Visits to Increase Vaccination Rates	Vaccination rates

Evidence-Based Interventions, by Avenue for Potential Action		Health Outcomes
D. Existing Community Characteristics and Services	Case-managed Care for Community-Dwelling Frail Elders or Integrated Long-term Care for Community-dwelling Frail Elders [such as CMS's Program of All-Inclusive Care for the Elderly]	Nursing home use Hospitl utilization Day-to-day functioning Caregiver satisfaction
	Interventions Engaging Community Health Workers or Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk	Blood pressure Cholesterol levels Physical activity Healthful eating habits Smoking cessation Glycemic control Lipid control Healthcare use Weight-related outcomes Colorectal screening Breast cancer screening Cervical cancer screening
	Activity Programs for Older Adults	Health outcomes Mental health Isolation Quality of life
	Home-delivered and Congregate Meal Services for Older Adults	Malnutrition
	Environments/spaces that facilitate physical activity: Complete Streets & Streetscape, Mixed-use Development, Creation of or Enhanced Access to Places for Physical Activity Combined with Informational Outreach Activities and Places for Physical Activity	Physical activity Pedestrian and cyclist safety Physical fitness

Avenue A: Physical Housing Standards and/or Enhancements are in HUD's purview. However, evidence for the pair of interventions that relate to the physical characteristics of housing units (Healthy Home Assessments and Home Modification Loans and Grants) is strongest for specific populations and health outcomes (e.g., hospitalizations for pediatric asthma) that are less central to older adults' ability to age in place.

The second group of interventions falls more clearly in the healthcare system. Each of the interventions listed as **Avenue B: Healthcare System Interventions and Partnership Opportunities** has systematic review evidence for one or more priority health conditions. The intervention approaches and outcomes focus on clinical management of diagnosed chronic conditions (e.g., high blood pressure, depression) or falls risk assessment and prevention.

The third group of interventions is comprised of **Programs and Services HUD Could Offer or Partner to Provide for HUD Residents (Avenue C)**. Within this group, four interventions (Service-enriched Housing, Interventions Engaging Community Health Workers, Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes among People at Increased Risk, and Activity Programs for Older Adults) have systematic review evidence for priority health outcomes. The other three interventions in this group (Home-delivered and Congregate Meal Services for Older Adults, Physical Activity Digital Health Interventions for Adults 55 Years and Older, and Home Visits to Increase Vaccination Rates) only have systematic review evidence on health-related outcomes (malnutrition) and behaviors (physical activity, vaccinations) rather than the health conditions suggested by our MCBS analysis.

The final group of interventions (Avenue D) is the set of potentially **Existing Community Characteristics and Services** with systematic review evidence. Six interventions, each of which were also included in either the healthcare system intervention avenue or the HUD or partner intervention avenue, have evidence on identified priority health outcomes. Three other interventions focus on community approaches to providing environments or spaces that facilitate physical activity (i.e., Complete Streets & Streetscape, Mixed-Use Development, and Creation of or Enhanced Access to Places for Physical Activity Combined with Informational Outreach Activities) and have evidence on health-related outcomes rather than the prioritized health outcomes suggested by our MCBS analysis.

DISCUSSION

Our results reflect a stepped approach to investigation in which each method of inquiry led to and informed the next. The literature review and environmental scan indicated that aging in place is a complex, multifaceted outcome, that also likely has many causes and influences. The individual intervention literature is thus difficult to summarize in a new primary review. Capitalizing on published systematic reviews narrowed the field of intervention approaches to consider, by relying on the established methods to identify broad intervention approaches with high levels of evidence. That smaller pool of intervention approaches could be stratified by implementation method, to offer concrete options for HUD and partners to pursue. Data from the MCBS allowed us to understand the relative risks for transition conveyed by different health conditions, and prioritize interventions within implementation method types. SME interviews confirmed that those interventions should be given due consideration, along with other interventions not included in the systematic reviews. SMEs also offered suggestions for innovation, for engaging traditional and non-traditional partners, and for what contextual information that will influence effectiveness is not reflected in the published evidence alone.

Taken together, the information and evidence gathered via these methods indicates that **no single intervention or implementation strategy is likely to fully support aging in place of HUD's older adult population, given the range of potential health needs of the population and the range of documented health outcomes of interventions.** Considerations of avoiding potential redundancy of interventions, and of potential "multisolving" interventions (i.e., interventions that can simultaneously address multiple health outcomes), could be used to inform combinations of approaches to pursue first.

Avenues for Potential Action to Improve the Health of Older Adults Served by HUD Programs

Of the four avenues for potential action, Figure 3 displays the **two avenues that currently offer stronger published and contextual evidence to support their consideration for possible action by HUD and partners from the health system, communities, and other federal agencies: Programs** and **Services HUD Could Offer or Partner to Provide and Healthcare System Interventions and Partnership Opportunities.**

Figure 3. Avenues with the Strongest Evidence to Improve Health of HUD-Assisted Older Adults

Of the identified **Programs and Services HUD Could Offer or Partner to Provide** for HUD residents (Avenue C), four specific interventions had systematic review evidence on key health outcomes to support older adults' aging in place: Service-enriched Housing, Interventions Engaging Community Health Workers or Combined Diet and Physical Activity Promotion Programs to Prevent Type 2 Diabetes Among People at Increased Risk, and Activity Programs for Older Adults. These interventions are preventive in nature, intended to reduce the risk of chronic physical and mental health conditions that contribute to transitions out of independent living.

Among the identified **Healthcare System Interventions and Partnership Opportunities** (Avenue B), those with systematic review evidence on key health outcomes were: Case-managed Care for Community-Dwelling Frail Elders or Integrated Long-term Care for Community-dwelling Frail Elders, Chronic Disease Management Programs, Risk Assessments & Personalized Approaches to Fall Prevention among Older Adults or Multi-component Fall Prevention Interventions for Older Adults, Team-based Care to Improve Blood Pressure Control, and Home-Based Depression Care Management. With the exception of the fall prevention interventions (for which healthcare provider screening is an important component), these healthcare interventions focus on management of diagnosed chronic conditions.

The two other avenues for potential action (Avenue A: **Physical Housing Standards and/or Enhancements** and Avenue D: **Existing Community Characteristics and Services**) appear to have less potential for effectiveness based on current evidence. Among the interventions that address Physical Housing Standards and/or Enhancements, the evidence is most clear for health outcomes and populations that are less directly relevant to health risk for transitions out of independent living among older adults (e.g., pediatric asthma hospitalizations).

However, **additional research or evidence review could be valuable to identify specific housing requirements or modifications that would be supportive of priority health outcomes among older adults, to inform future HUD support for that type of intervention.** The avenue of Existing Community Characteristics and Services was initially considered as having potential for use in HUD prioritization of future housing locations and vouchers, to place HUD residents in neighborhoods with available services to support their health. However, that kind of prioritization raises health equity questions, as such a decision would also result in further concentration of services in certain areas, potentially at the cost of providing housing to those most in need. Given that several SMEs emphasized the potential value of built environment approaches that could serve as "upstream" and multisolving preventive interventions by creating spaces to facilitate older adult physical activity and socialization (i.e., Complete Streets & Streetscape, Mixed-use Development, Creation of or Enhanced Access to Places for Physical Activity Combined with Informational Outreach Activities and Places for Physical Activity), this avenue of Existing Community Characteristics and Services may also benefit from further investigation and consideration.

CONCLUSIONS

We sought to identify evidence-informed policies and practices related to aging in place, and offer guidance about what is most needed, relevant, and immediate for HUD-assisted older adult tenants at this time. We used four methods of inquiry to characterize and understand the evidence from published intervention literature, systematic reviews, health data on older adults, and CDC subject matter experts. **Given the diversity of health factors that likely contribute to aging in place, multiple interventions or avenues may be needed to support HUD's priority for this population.** We found the strongest support for two groups of interventions: **Healthcare System Interventions and Partnership Opportunities** for management of existing chronic health conditions among older adults and reduce risk for falls, and **Programs and Services HUD Could Offer or Partner to Provide** to promote health and prevent impairment among all older adults in HUD housing. **Further research or exploration might be valuable to identify which specific physical standards, enhancements, or characteristics of housing and communities support aging in place among older adults**. SMEs identified important considerations for selection and implementation of interventions, including the potential for "multisolving" interventions that could address multiple health issues, future research to address systematic review evidence gaps (e.g., built environment approaches), potential innovations in identification and amelioration of risk (e.g., for falls), potential barriers to program participation, critical implementation supports to promote intervention fidelity to evidence-based models, and other local, state, and federal agency partnerships to support implementation and sustainability.

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APPENDICES

APPENDIX A. STATEMENT OF WORK: AGING IN PLACE JOINT STUDY WITH HHS

Interagency Agreement# 86614621E00002

PURPOSE

The Department of Housing and Urban Development (HUD) and the Centers for Disease Control and Prevention (CDC) plan to establish a collaborative relationship to leverage opportunities and resources in support of shared agency goals and priorities related to aging in place. The first shared priority is to provide evidence informed approaches for affordable senior housing programs that coordinate health, wellness, and supportive services to help older adults remain healthy, age in their community, and reduce their use of costly health care services. The broad purpose of this interagency agreement is to build a sustainable, collaborative partnership between HUD and CDC to intentionally advance shared priorities related to **health and housing**.

Long-standing systemic health and social inequities have put many racial and ethnic minority groups at increased risk of getting sick and dying from COVID-19. Therefore, this collaboration takes on special importance as the nation responds to the COVID-19 pandemic. CDC is the Nation's leading science-based, data-driven, service organization that protects the public's health. HUD administers programs that provide housing and community development assistance, and in this role houses millions of the nation's most vulnerable populations. This collaboration provides a unique opportunity to pilot evidence-informed policies and practices supported by CDC subject-matter experts in HUD-assisted housing.

The goals for this collaboration are to:

- Identify evidence-informed policies and practices related to aging in place.
- Narrow the scope to what is needed, relevant and immediate for HUD-assisted tenants at this time.
- Convene HHS and HUD partners to explore opportunities to align the array of existing HHS collaborations and investments to increase access to community and clinical services for wellness and care coordination for low income older adult populations.
- Convene HHS and HUD to jointly assess learnings from environmental scans, convening, and interim findings from the IWISH demonstration to inform future directions for scaling aging in place models in HUD assisted housing.
- Inform the design, research questions and evaluation for HUD to develop, implement, and evaluate pilot tests based on research design in HUD sites; and
- Identify appropriate ways to scale-up evidence-informed policies and practices to improve the health of the nation's low-income population.

The focus of this collaboration will begin with, but will not be limited to, the nation's older adult population.

TASKS/DELIVERABLES

Specific detailed descriptions for tasks and deliverables will be contained in 7600 Part B forms submitted for each year of this IAA. Funding obligated to CDC will be used to fund cooperative agreements to complete project deliverables and will not support salaried CDC employees.

Four overarching deliverables have been agreed upon by CDC and HUD. These may be modified as needs arise, upon the agencies' mutual agreement and modification to the IAA. The overarching topics are:

V. Conduct environmental scans, scoping reviews, and host key critical discussions to identify what CDC has learned from research and program activities that is useful to HUD-assisted housing and its efforts to support aging in place among low income households; identify needs, barriers, challenges, policies, guidance, best practices, practice-based evidence, opportunities, lessons learned and available cost or finance models for supportive services that specifically apply to low income older adult populations served by HUD.

a. The low-income older adult population that is aging in place in multifamily private market and public supported housing, and the owners, investors, lenders, builders, (the producers) of such housing.

b. The low-income population that is aging in place in single family owner and renter occupied private market and federally subsidized housing, and the producers, owners, and investors in such housing.

VI. **Convene Federal Interagency Summit on Aging in Place** with HUD, CDC, and HHS partners including CMS, ACL, NIH, HRSA (others) stakeholders to fill gaps and document the array of existing HHS and HUD investments, select learnings from grantees, and emerging practice models, to increase access to community and clinical services for wellness and care coordination for low income older adult populations. Topics for discussion and learnings from the Federal Interagency Summit on Aging in Place could include:

   a. Defining existing barriers and challenges associated with coordinating federal supportive services programs

   b. Opportunities for interagency collaboration or alignment

   c. Summary of findings for cost-sharing options

   d. Future directions including, research questions, and research design concepts or pilots

VII. **Develop, in collaboration with HUD and federal partners**, a synthesis of learnings from environmental scans and sense making with federal partners into a report on future directions including: research questions, research design concepts or pilots, and collaborations for aging in place in federally assisted housing. The report will summarize the scale and scope of research pilots or demonstrations and build on interim IWISH findings and knowledge gained through environmental scans and Federal Summit on Aging in Place. The sense making endeavor will inform research questions for HUD to consider and the design of pilots that identify opportunities for HUD stakeholders to support older adults aging in place. CDC may propose pilots or demonstrations to HUD to test promising financial, technological, and organizational models to produce better outcomes for aging in place in assisted housing, and which reflect the collaboration needed between federal, state, and local agencies to accomplish this goal.

VIII. **Provide technical consultation and assistance to HUD and partners** on the implementation, monitoring, and evaluation of demonstrations or pilots. CDC will provide strategic leadership and scientific oversight, in close collaboration with HUD and other key stakeholders. As part of determining lessons learned, CDC will have access to the active learning phase of IWISH projects and early stages of the pilots. Findings and conclusions will be shared for scaling promising approaches.

APPENDIX B. CDC SUBJECT MATTER EXPERTS SEMI-STRUCTURED INTERVIEW GUIDE

Background and objective:

- As indicated in the email, CDC's Office of Policy Analytics and Population Health (OPAPH) and HUD have entered a 5-year IAA to leverage opportunities and resources in support of shared agency goals and priorities related to aging in place.
- NNPHI and GHPC have been engaged this year to support the building of relationships across agencies, share priorities and existing efforts, and work in partnership with the team on an environmental scan.
- As part of this year's efforts, GHPC and the Office of Policy Analytics and Population Health (OPAPH) have done a rapid review of published recommendations, to identify broad approaches with strong evidence of health impacts related to aging in place.
  Through SME interviews like this one, we want to elicit contextual and implementation expertise about the evidence base to help us prioritize among the array of different avenues HUD could pursue.

Here is some information regarding what we've learned from the evidence:

- To arrive at an initial set of broad-based approaches with strong evidence, we compiled and condensed recommendations from the Community Preventive Services Task Force Community Guide and the County Health Rankings & Roadmaps What Works for Health resource that have relevance to health aspects of aging in place.
- We also categorized lists of specific evidence-based interventions from sources like the National Council on Aging and the Administration from Community Living whose interventions often are encompassed by the more general recommendations.
- One of the first challenges we encountered was that there are few studies measuring transition into assisted living or nursing facilities as an intervention outcome.
- Thus, we must consider interventions with evidence for outcomes on a broader set of precursors of individuals not being able to care for themselves.
- Those precursors include cognitive or mental limitations (such as dementia), physical limitations (such as from injuries resulting from falls), and special health needs (including chronic diseases or acute illnesses)
- Given your expertise in [insert area(s) of expertise] we are seeking more in-depth about the intervention evidence, potential transferability and implementation of different evidence-based interventions in HUD housing like Section 202 housing, and any other relevant insights you might have regarding this topic and/or intervention(s).
  Attached to this email is a spreadsheet that includes high-evidence recommendations we identified [insert brief description].

<u>Questions Specific to the Spreadsheet:</u>

1. Can you share with us the evidence and relevance of interventions addressing [insert area(s) of expertise] that you think are important to the partnership between CDC and HUD?
2. Do you have any questions about the spreadsheet?

Discussion Questions:

1. What are the critical funding and implementation supports and challenges that we need to consider with these kinds of interventions? Where does funding primarily come from? What role does insurance coverage and reimbursement policies play?
2. Who are the critical partners, implementers, or funders of these kinds of interventions? Do partners differ at the national, state, and local levels?
3. If we were only looking at these evidence-based recommendations and interventions, what key information about [insert area(s) of expertise] would be missing? In other words, what is not captured by the published recommendations that we need to know about?
   Are there innovative approaches or emerging evidence that we need to consider that haven't risen to the level of strong evidence yet? What can you share regarding studies that might be recent or currently underway and relevant to the topic?
4. Do you know of any large-scale implementations or pilots – especially in similar populations or in conjunction with housing – that are models for what HUD could do in this area? Do you have any implementation ideas or suggestions for HUD?
5. Are there any potential "multisolver" interventions in [insert area(s) of expertise] that are being used to achieve other health objectives?
6. Sometimes in a health area there are known interventions with harmful effects or a contentious history. Are there any intervention areas in [insert area(s) of expertise] that you would caution us against considering for any reason?
7. Is there anything else you feel we need to know as we consider [insert area(s) of expertise] in relation to the IAA with HUD, that we did not ask about?
8. Are there any additional resources or contacts that you can share with us that may further assist our efforts? Resources could include reports, papers, briefs, etc. Contacts could be internal and external to CDC.

APPENDIX C. CDC SUBJECT MATTER EXPERTs INTERVIEWED

BY AREA OF EXPERTISE, CENTER AND DIVISION

Table 3: Potential Evidence-Based Actions to Support Aging in Place

Areas of Expertise	CDC Center and Division	SME Name(s)
Aging, Dementia and Alzheimer's Disease, Care and Service Provision	National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health, Healthy Aging Branch	Janelle Gore Eva Jeffers, MPH Lisa McGuire, PhD
Behavioral Health	National Center for Chronic Disease Prevention and Health Promotion, Division of Population Health, Epidemiology and Surveillance Branch, Alcohol and Public Health	Marissa Esser, PhD, MPH
Diabetes	National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation	Christopher Holliday, PhD, MPH Patricia Schumacher, MS Holly Williams
Disability and Health Equity	National Center on Birth Defects and Developmental Disabilities, Office of Policy, Partnerships and Strategy	Shannon Griffin-Blake, PhD
Fall Prevention	National Center for Injury Prevention and Control, Division of Injury Prevention	Gwen Bergen, PhD, MPH Christopher Earl, MPH Robin Lee, PhD, MPH
Heart Disease and Stroke	National Center for Chronic Disease Prevention and Health Promotion, Division of Heart Disease and Stroke Prevention	Written comments provided in lieu of SME interview
Minority Health and Health Equity	Office of the Director, Office of Minority Health & Health Equity	Jeff Hall, PhD, MSPH
Physical Activity	National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity	David Brown, PhD Heather Devlin, MA Katherine Irani, MPH, MSW Ken Rose, MPA Ayla Schermer, MURP

APPENDIX D. CDC SUBJECT MATTER EXPERT INTERVIEW SUMMARY

The main body of the report contains the insights from the SME interviews that are most relevant to the report's main findings and conclusions; this appendix provides a lengthier summary of the themes mentioned in the interviews. Prior to the interviews, CDC SMEs were provided with background information regarding the IAA and a spreadsheet of information regarding the interventions with a high level of systematic review evidence pertaining to their areas of expertise. At the beginning of each interview, the background for the IAA and the methods used to identify the list of interventions were reiterated. The SMEs were given the opportunity to ask clarifying questions about the objectives and methods of the project before the structured interview began (see Appendix B for the Interview Guide and Appendix C for the list of SMEs and areas of expertise).

INITIAL REACTIONS TO THE LIST OF INTERVENTIONS

SMEs indicated that they were familiar with the included interventions and offered positive, affirming reactions to those interventions. They expressed a general understanding and approval of the inclusion of the categories of interventions that were recommended by the Community Guide and County Health Rankings and Roadmaps with the highest levels of evidence. The SMEs suggested that specific program examples be drawn from those same sources of information, or from CDC-developed resources such as CDC's **Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults**. The SMEs noted the importance of standardized interventions with appropriate implementation supports to ensure fidelity to the evidence-based models, as well as the potential value in intentional adaptations to standardized programs to tailor for the context, culture, language, or other characteristics of a population. **Resources for Enhancing All Caregivers' Health** (REACH), implemented by the Department of Veterans Affairs and Indian Health Services, was shared as a program example that was adapted for veterans and tribal communities.

SMEs recognized the value of population-level approaches, although for some content areas they emphasized screening and assessment of an individual's specific risks, health status, and/or functional abilities (e.g., via health care provider or community health worker) and matching them with the appropriate intervention strategy. For example, SMEs noted that although efforts to build strength and balance in the whole population of older adults might have a small effect on risk, individualized interventions are critical in effective fall prevention due to the wide range of potential causes of falls (e.g., medication, eyesight, strength, physical hazards, etc). A related theme that arose during several interviews was the awareness of community members' needs, desires, and wishes. One SME suggested reviewing the literature regarding community engagement theories and guiding principles as interventions are considered. Another SME further emphasized this point, saying, "Are there older adults that we could ask? Because…when we've had panels of older adults, they'll quickly go, 'Ah, that that's not going to work.' And they'll immediately tell you why it's not going to work." Several SMEs recommended that the voice of members of the affected community be incorporated into decision-making.

ADDITIONAL EVIDENCE-BASED INTERVENTIONS, EMERGING EVIDENCE, AND GAPS

SMEs suggested several additional evidence-based recommendations and interventions for consideration, beyond the list they were provided. Some of the suggestions were from the reviewed evidence-based recommendation sources while others were from different sources:

- Community Guide recommendations related to **alcohol sales outlet density** and **commercial host liability**, or dram shop liability, for preventing and reducing alcohol-related harms at the community-level
- Interventions included in CDC's **Compendium of Effective Fall Interventions: What Works for Community-Dwelling Older Adults**
- A new recommendation from the Community Guide about the importance of **interventions that increase awareness, engagement, programming, and access to the outdoor environment**

During some of the interviews, the SMEs identified the opportunity to include more general strategies or approaches, in addition to the programmatic interventions from the spreadsheet we provided. For example, the Still Going Strong campaign aims to raise awareness among older adults regarding preventable injuries. The SME described the campaign

this way: “it cuts across all injuries and tries to give a very positive kind of empowered vision of being an older adult and saying, you can still do things you used to do, and you just need to do these things to prevent injury.” They reflected that efforts to increase knowledge and decrease stigma might increase participation in available interventions, even if such efforts alone have not been shown to impact key health outcomes of this IAA.

Similarly, some of the SMEs reflected on the opportunity to incorporate additional organization- and community-level approaches or initiatives into the project that are broader and not limited to individual-level health outcomes. An example identified during two of the interviews was AARP’s **Network of Age-Friendly States and Communities**, which SMEs reported offers elected officials and partner organizations assistance with assessing how age-friendly a geographic area is and working to plan, implement, and evaluate activities to increase quality of life for all individuals in the community. SMEs also highlighted USAging’s **Dementia Friendly America**, which they reported is focused on engaging a variety of sectors and organizations in raising awareness and building capacity to support people living with dementia and their caregivers, thereby elongating community living.

Some SMEs noted that interventions to support caregivers of older adults were absent from the list of identified interventions and suggested their consideration, especially regarding effective interventions for supporting aging in place for individuals with dementia or other cognitive or physical impairments. One SME described the importance of caregivers this way, “We do a lot of work looking at caregivers in the health and wellbeing of caregivers, because we know how crucial they are to not only maintaining their health, wellbeing, and independence, but also the person they provide care for.” To that end, the SMEs also suggested groups such as ACL’s **RAISE Family Caregiving Council**, a federal advisory council that recently delivered a report to Congress about strategies to support family caregivers.

IDENTIFYING POTENTIAL MULTISOLVERS

We asked SMEs to suggest known or potential “multisolving” interventions, that might impact more than one health condition or reduce the risk factors for more than one disease or condition. SMEs discussed how addressing characteristics of the neighborhood, including ensuring safe and high-quality housing, decreasing community density of alcohol sales, increasing safety, reducing crime, and increasing accessibility and walkability could support older adults to make healthier choices, have more social interaction, and provide a healthier community in which they live – each of which might contribute to prevention of conditions that lead to transitions out of independent living. Specific potential multisolving interventions highlighted include **CDC’s National Diabetes Prevention Program**, telehealth, and interventions that engage **Community Health Workers**, which have potential to positively impact multiple health outcomes relevant for reducing transitions and improving quality of life. **Stopping Elderly Accidents, Deaths, and Injuries** (STEADI), for example, was mentioned as a possible multisolving approach for addressing falls and chronic conditions, but could potentially address depression, loneliness, social isolation, and concerns related to self-harm and suicide, according to SMEs.

INTERVENTIONS TO AVOID

Overall, SMEs did not warn against any interventions due to known harmful effects or contentious history. However, they expressed concern about potential unintended consequences of interventions. SMEs discussed that it is important to consider where unintended consequences occur, how often, and how they can be prevented from happening. For example, one interview discussion noted that if building more housing in a community increases demand and housing costs, that could lead to the displacement of lower-income people and renters. One SME suggested that HUD may be especially well positioned to address these questions in relation to the impact of housing supply, housing costs, and inequitable displacement. Several SMEs also expressed concern about the wide variation in program quality and fidelity in the field, even within evidence-based intervention models. The SMEs noted again the tension between standardization and intentional tailoring, i.e., although fidelity to the key components of an evidence-based model is typically the goal, careful tailoring to local needs and resources could remove barriers to participation and effectiveness.

IMPLEMENTATION CONTEXT, REACH, AND POTENTIAL IMPACT

As described below, the SMEs discussed a diverse range of issues related to the implementation context and reach and identified several potential considerations they advised to be assessed during the IAA. Further, SMEs felt that it is still unclear how best to adapt, scale up, and disseminate the interventions to decrease health disparities and improve health outcomes, and avoid unintended consequences of implementation.

Population variation. Several SMEs emphasized the diversity of populations that need to be taken into consideration when making decisions about interventions to support aging in place. For example, one SME described the variation in the populations reached by HUD-supported housing and the variation in the individuals' needs when they stated, "…as you're talking about your interventions and HUD, that whole range from frailty to healthy older adults I think is something to consider." Several other SMEs shared similar thoughts, cautioning against thinking that all older adults have similar needs as they age. One SME went further to note the variability within individuals over time: "You've got people who are fully independent, you've got people who might have a certain low level of needs for certain types of supports, with specific instrumental activities of daily living. You have other people who are beginning to reach a threshold where they may need to be shifted to a place, such as an assisted living facility. And then depending on their health conditions, people cycle in between the different circumstances." SMEs thus felt that no single solution or intervention would likely be adequate.

Efforts to improve the community's provision of supportive environment for individual needs related to aging in place was also noted as important for existing housing. Reflecting on this opportunity, one SME stated, "you can't age in place well without having an environment that is supportive of the individual…we talk about a person with a disability, it's really not the disability that causes the impairment, it's the environments that create a lack of access or accessibility and be able to have full independence and functioning." Other characteristics identified by SMEs as relevant to the appropriateness and success of interventions included marital status, age, availability of care partners, social support, health status, and receipt of other community-based and health care services. SMEs cautioned that ignoring population variation could result in lower effectiveness of interventions.

Barriers to participation. Related to individuals and to the population as a whole, SMEs raised several issues regarding potential barriers to participation of older adults in interventions. One SME said, "you can have the best program in the world, but if people can't do it or won't do it or don't feel like they're able to do it, then it's not worth much." SMEs recommended working to better understand the barriers to participation and which wraparound supports and incentives are most effective to maximize the benefit of the interventions. SMEs noted that older adults typically have more available time post-retirement to engage in health-promoting activities and an inclination to take advice from their doctor or health care provider. However, one SME said, "It's not enough to just have a doctor recommend an intervention to a patient. They of course have to adopt it, to do it, and follow through on it." For example, one SME noted that many people believe that falls are an inevitable part of aging and there is nothing that can be done to prevent them. Thus, a doctor or health care provider's recommendation may not be enough; signing up for the program, adopting the recommendations, and changing attitudes and beliefs may also be necessary. Other barriers to participation in interventions mentioned by SMEs included transportation, cost, and perceived value of the intervention.

Telehealth and other digital interventions were mentioned by SMEs as both a potential barrier and facilitator of participation by older adults. Telehealth and digital interventions were suggested as potential solutions to barriers such as transportation and service availability outside urban or suburban areas. According to one SME, "we think the digital space is really an opportunity for more innovation and thinking more about how people, particularly through learning through the pandemic, get their medical information… our biggest opportunity here to really dig deep and figure out what are some of the opportunities [are] going forward, whether it is thinking of what we've learned over the last two years through telehealth and how to build that infrastructure." However, SMEs also noted that older adults may not have as much cognitive ability, motivation, or interest in telehealth and digital interventions as younger populations, and such innovations cannot serve those who cannot access high-speed broadband. Thus, while telehealth and digital interventions may offer some promise, SMEs cautioned against assuming that those approaches would solve all participation and access barriers.

Insurance coverage. Costs of participating in interventions was identified as a potential barrier in several SME interviews, which often led to SME discussion of insurance coverage and reimbursement. Medicare and Medicaid were specifically mentioned, given the magnitude of the coverage the public programs provide for older adults with low-income. It was noted that the availability and scope of home- and community-based services, particularly those provided by Medicaid, vary by state. Specific examples included lacking or inconsistent coverage of health and wellness programs, home modifications, assistive technology, and vision coverage. Those services were highlighted by SMEs as potentially critical supports for aging in place among individuals receiving supportive housing who require assistance with activities of daily living or instrumental activities of daily living. The Medicare annual wellness visit, established as a benefit under the Affordable Care Act, was pointed to by a few SMEs as an opportunity to identify, screen, and refer patients to programs or other follow-up care.

Payment mechanisms and insurance coverage were also referenced by SMEs in relation to the sustainability of programmatic interventions. The 2020 Reauthorization of the Older Americans Act (P.L. 116-131), administered by the Administration for Community Living, was identified by several SMEs as a critical statute for supporting aging in place. The infrastructure of the Area Agencies on Aging and funding that stems from the Older Americans Act were highlighted by SMEs as providing a sustainable source of health and wellness, caregiver, and home and community-based services. Many of the interventions have standards, requirements, and monitoring related to their implementation including explicit expectations regarding how it is delivered, and by whom. In most cases there are accrediting bodies, or another type of organization that provides oversight. These factors were mentioned as relevant in considering the steps and organizations involved in delivering some of the interventions included in the list.

Community around the housing. Community features and characteristics were described as facilitators of healthy behaviors and aging in place, and thus as appropriate intervention opportunities, according to SMEs. Communities that are accessible, safe, walkable, and have amenities like pharmacies were described as supportive for all populations, including older adults. One of the SMEs discussed the importance of the community context saying, "Upstream things… around housing, around transportation, around adequate green space to be able to walk, a safe environment, safe from violence, all have to be complimentary so they can make these changes and sustain them over time." It was noted that there are opportunities to prioritize housing development in places that have these features, as one SME stated, "But as we think about housing, whether it's section 202 or other types of residencies, we need to be more intentional again about what is around the housing that we're developing." Most of the SME interviews touched on aspects of the surrounding community in some way, urging the project team not to neglect those opportunities in favor of only including traditional health system interventions.

Local and state policy context. Relatedly, several SMEs noted the local and state policy context as influencing the communities in which HUD residents live. As mentioned above, they noted that state and local zoning, land use, and licensing policies (e.g., the density of alcohol sales outlets, improving accessibility and walkability, and access to transportation and green space) could affect the feasibility and implementation of interventions as well as the health of older adults. A complicating factor that SMEs noted with respect to the policy context is that implementation of interventions to support aging in place often cross sectors, authorities, contexts, and geographic boundaries. As an illustration of this awareness, an SME said, "We have a specific lane we tend to work in. Think about it, when you bring in your partners, they'll say, 'Oh, no, we can't do that. Policy such and such will prohibit.'…it's like looking for the lines in the matrix, if you will." One SME presented a different picture of the challenge some states face: "Another question to ask is, is there an aging focus within the infrastructure somewhere? Because there are some states where, with meager resources, you might have one person focused on aging." A recurring theme across interviews was the recommendation of needing to build relationships and strengthen cross-sector partnerships to address those challenges to implementing interventions to support aging in place.

Local, state, national, and federal partners. An emphasis was placed in many interviews, particularly those focused on chronic disease or injury, on clinical health care partners. Partnership with health care partners was frequently centered around the screening, assessing, referring, or caring for patients. As discussed previously, understanding the relevant risks at an individual- or population-level was key to connecting people to the appropriate clinical health programs and services for some health conditions. Health care partner sites that were mentioned include primary care, hospital-based providers, Federally Qualified Health Centers (FQHCs), and public health departments. SMEs also mentioned a ranges of specific health care providers who might be engaged in this effort, including doctors, nurses, optometrists, ophthalmologists, pharmacists, and emergency medical services (EMS). One SME said, "another emerging area that we're trying to look at and evaluate is EMS and community paramedicine in the community…EMS a lot of time gets called to a house to pick somebody up after a fall, and the person never gets transported, but a huge number of calls are for this. So they're in a good position to identify people who need medical assessment for falls risk reduction and treatment." Thus, although clinical health care was a frequent topic of discussion for SMEs, none recommended relying exclusively on traditional primary health care providers. Several SMEs mentioned the potential for valuable data linkages within the health care system and between health care and non-health care settings, to better identify individuals who need specific interventions or services.

Another theme regarding partnering with health care was the suggestion of the variety of ways to help people access the health care system, including community health workers, social workers, community paramedicine, and online screening tools. Relying on community health workers and community paramedicine for assistance within their scope of practice might also help address the workforce shortage in health care fields, according to the SMEs. Non-health care

partners were also suggested for the potential to maximize reach, tailoring, uptake, retention, and overall sustainability and success of interventions. As one SME explained, "We recognize delivery organizations of all types to offer this program in all kinds of settings. It can be taken to settings in the community. It can be taken to senior centers. It can be taken to assisted living or active senior communities. All those kinds of settings are absolutely appropriate and possible."

Other organizations, such as local and state government, tribal, and nonprofit organizations were also highlighted by several SMEs in facilitating increased capacity for aging in place and avoiding or delaying transitions to institutional settings. Government and nonprofit organizations were identified often, and included the Area Agencies on Aging, groups focused on caregiving, faith-based organizations, the Alzheimer's Association, senior centers, neighborhood and professional associations, and transportation and land use planning departments. Drawing on the capacity and expertise of those and other on-the-ground organizations was suggested as an enabling factor for HUD and others to be positioned to accomplish desired goals. Partnering with community organizations and service providers to offer on-site services in HUD-supported housing sites was shared by SMEs as an approach to increase awareness, and access to supports for older adults and their caregivers.

Finally, as SMEs considered HUD's role, they also thought about other federal partners that should be included in the project, in addition to CDC. Specifically, SMEs identified the Environmental Protection Agency, Department of Transportation, and several agencies within the Department of Health and Human Services, including the Administration for Community Living, the Housing and Resources Service Administration, the Substance Abuse and Mental Health Services Administration, and the National Institutes of Health.

GLOSSARY OF ACRONYMS

ACL: Administration on Community Living

ADBI: Aging and Disability Business Institute

CDC: Centers for Disease Control and Prevention

CHR&R: County Health Rankings and Roadmaps

CMS: Centers for Medicare & Medicaid Services

EMS: Emergency Medical Services

GHPC: Georgia Health Policy Center

HHS: Department of Health and Human Services

HRSA: Human Resources and Services Administration

HUD: Department of Housing and Urban Development

IAA: Interagency Agreement

IWISH: Integrated Wellness in Supportive Housing

MME: Medicare/Medicaid ("dually eligible") Enrollees

MCBS: Medicare Current Beneficiary Survey

NCOA: National Council on Aging

NNPHI: National Network of Public Health Institutes

OADPS: Office of the Associate Director for Policy and Strategy (now Office of Policy, Performance and Evaluation: OPPE)

OPAPH: Office of Policy Analytics and Population Health (now Policy Analysis and Engagement Office; PAEO)

OPPE: Office of Policy, Performance, and Evaluation

PIC: Public and Indian Housing Information Center

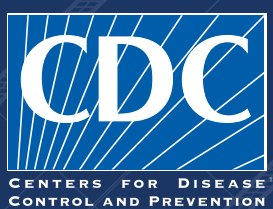
PIH: Public and Indian Housing

SAMHSA: Substance Abuse and Mental Health Services Administration

SME: Subject matter expert

STEADI: Stopping Elderly Accidents, Deaths, and Injuries

TRACS Tenant Rental Assistance certification System


CDC
Centers for Disease Control and Prevention


National Network
of Public Health Institutes