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Vulnerable African American Seniors: The Challenges of Aging in Place

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ABSTRACT
American Community Survey data are used to develop typologies of the generational dynamics and living arrangements of the estimated 1.6 million African American older adult households who will likely encounter the most difficulty aging in place. Policy recommendations and strategies are offered to address the specific barriers and challenges that must be overcome in order for these older adults to successfully live out their lives in their homes and community.

KEYWORDS
African Americans; older adults; living arrangements; aging in place

Introduction

The American population age 65 years and older is growing more rapidly than the total population (Johnson & Parnell, 2016). Moreover, below-replacement-level fertility, continued aging of the baby boom cohort, and increased life expectancy after age 65 almost assure that older adult population growth will continue to outpace total population growth over the next quarter century (Exner, 2014; Johnson & Parnell, 2016; Xu, Kochanek, Murphy, & Arias, 2014, 2016). This demographic shift raises critical questions regarding how we will pay for long-term services and supports for a burgeoning older adult population (Atkins, 2016; Atkins, Tumlinson, & Dawson, 2016; Bosworth, Burtless, & Zhang, 2016; Hoagland, 2016; Mann, Raphael, Anthony, & Nevitt, 2016; Rother, 2016; World Economic Forum, 2017).

Most older adults prefer to age in their homes rather than in an institution (Cirillo, 2017; Eisenberg, 2015; Farber & Shinkle, 2011). Further, some studies suggest that aging in place, including long-term care in the home, is less expensive than nursing care, assisted living, and other forms of institutionalized care (HUD User, 2013b; Marek, Stetzer, Adams, Popejoy, & Rantz, 2012).[1] It is therefore a

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[1] In 2016, according to the Genworth Cost of Care Survey, the estimated annual cost (U.S. median) of homemaker services was $45,760, for a home health aide was $46,680, for adult care was $17,680, for assisted living facility was $43,539, and for nursing home care it was $82,112 for a semiprivate room and $92,378 for a private room (Genworth Financial, 2017). We should note, however, that some studies suggest that, compared to nursing home care, in-home care may not be cheaper, especially when the costs of food and rent and not just services are included (Shapiro, 2010).

strategic imperative to identify the nation's older adult population in the greatest need of aging in place assistance. Some research has begun to address this issue. In an earlier paper, for example, we identified three overlapping sociodemographic groups who will likely encounter difficulty positioning themselves to successfully age in place (Johnson & Appold, 2017).

The first group was comprised of older adults financially burdened by excessive housing cost. In 2011–2015, they spent more than 30% of household income on mortgage or rent and what the Census Bureau identifies as "selected monthly owners cost" (American Community Survey, 2017). For our purposes, this was a proxy measure for a broad range of financial considerations that make it difficult, if not impossible, for older adults in this situation to afford age-friendly home modifications (Gassoumis, Lincoln, & Vega, 2011). An estimated 30% of all U.S. older adult households were burdened by excessive housing costs (9.7 million) in 2011–2015, according to pooled data from the American Community Survey (ACS). These households were home to 26% of all persons living in U.S. older adult households (17.7 million) during this period (Johnson & Appold, 2017).

The second group was older adults who rented their homes. By virtue of their tenure status, renters are totally reliant on landlords or property owners to make the necessary renovations that will allow them to age in place—an unlikely occurrence in the absence of proper incentives and/or government mandates such as those in U.S. Department of Housing and Urban Development (HUD)-subsidized rental properties. ACS data revealed that an estimated 9% of all U.S. older adult households rented in 2011–2015 (6 million). During this period, 17% of all persons in U.S. older adult households lived in renter-occupied units (11.3 million) (Johnson & Appold, 2017).

The third group was older adults who are African American. We asserted that this group was likely to face aging-in-place challenges for three reasons:

1. Due to a legacy of discrimination in the labor market, in housing, and in other walks of life, African American older adults are less likely to have accumulated wealth to invest in age-friendly home modifications. In fact, they are experiencing a retirement crisis (Brooks, 2017; Rhee, 2013; Sykes, 2016; Vinik, 2015).
2. Reflective of disparate treatment they have endured, "the African American older adult poverty rate was more than twice as high as the poverty rate for all older adults (22.5 percent versus 9.5 percent) and three times as high as the poverty rate for non-Hispanic white older adults (22.5 percent versus 7.8 percent)" in 2015 (Johnson & Parnell, 2016, p. 14; also see U.S. Department of Housing and Urban Development [HUD], 2013a).
3. African Americans are more likely to experience disability earlier and therefore have shorter years of active life expectancy than whites (Freedman & Spillman, 2016).

African Americans, ACS data revealed, occupied 9.3% of all older adult households (2.9 million) and represented 11 percent of all persons living in U.S. older adult households (7.1 million) between 2011 and 2015 (Johnson & Appold, 2017).

Building upon this earlier research, we focus more specifically in this article on the subset of U.S. older adult individuals and households that will likely encounter the most difficulty aging in place. That is, we target households where there is at least one African American who is 65 or older and where the head of household is either a renter or a person financially burdened by excessive monthly housing cost, irrespective of whether they own or rent their dwelling unit. We believe households in this situation face multiple barriers to aging in place that are beyond their control and therefore are referred to hereinafter as the most vulnerable older adult households.

Our goals in this research are to:

1. Create a demographic profile of this subgroup of older adults and the housing units they occupy.
2. Develop a household typology that encapsulates the generational dynamics and living arrangements of this subgroup of older adults.
3. Identify specific barriers and challenges that must be overcome in order for them to successfully age in place.

We conclude by discussing policy options and strategies for addressing this problem.

Critical background

In order to successfully age in place, age-friendly modifications are usually necessary to prevent life-threatening accidental falls and exposure to other environmental risks or hazards that unfortunately are all too common among older adults living in their own homes today (Ambrose, Paul, & Hausdorff, 2013; Tinetti, Speechley, & Ginter, 1988). In 2015, according to the Centers for Disease Control and Prevention (CDC), "The cost for falls to Medicare alone totaled over $31 billion" (CDC, 2016). Looking ahead, as the CDC stresses, "[B]ecause the U.S. population is aging, both the number of falls and the cost to treat falls are likely to rise" (CDC, 2016). Clearly, effective policies and strategies to foster and facilitate successful aging in place are needed to reduce the number of life-threatening falls and address other challenges that accompany the aging process.

Above and beyond their own physical, socioemotional, and other conditions, older adults' ability to successfully age in place will hinge on the age and structural condition of their dwelling, whether they own or rent, and their current family living arrangements. These three factors will influence their ability to pay for needed modifications of an existing dwelling or relocation to alternative housing that is age-friendly (Johnson & Appold, 2017).

Depending on the age and structural condition of the dwelling unit, age-friendly modifications can be expensive (Heller, 2016; Joint Center for Housing Studies, 2014; Williams, 2014), especially if assistive technologies designed to support aging in place are a core component of the solution (Peek et al., 2016). In some instances, the dwelling may be in such a deteriorated state that relocation is the only

reasonable option for successful aging in the community. This adds direct and indirect costs where the older adults are long-term residents of their current dwelling and deeply rooted in the institutional and social fabric of their local community (Löfqvist, et al., 2013; Novack, 2011).

Modifying an existing home or moving to an alternative house may be doubly difficult when older adults are involved in multigenerational living arrangements (Barnett, et. al., 2016; Bitter, 2016; Cohn & Passel, 2016; Josephson, 2016; Niederhaus & Graham, 2013; Xu, Murphy, Kochanek, & Arias, 2016). Recession-induced employment dislocations, get-tough-on crime and education policies, the recent housing foreclosure crisis, and America's prescription drug overdose epidemic—a tragic development that is leaving behind significant numbers of orphaned children—are among the recent developments that have forced many older adults into caretaker roles (Abrahms, 2013; Carrns, 2016; Cohn & Passel, 2016; Fry & Passel, 2014; Gamboa, 2016; Lofquist, 2012). In such instances, older adults are providing lodging and other basic necessities for adult children, grandchildren, and /or other relatives. In other instances, the aging process itself has forced some younger family members into caregiver roles, housing and assuming primary responsibility for the well-being of an older adult parent, parent-in-law, or other relative (Cohn & Passel, 2016; Johnson & Appold, 2017). These caretaker and caregiver roles can impose financial constraints on the ability of such households to make age-friendly home improvements or modifications.

The data

We draw upon the same database used in our earlier research (Johnson & Appold, 2017), the Public Microdata Sample (PUMS) file of the ACS, a pooled database of five of the most recent annual surveys (2011–2015), which represents roughly 5% of the U.S. population (American Community Survey Office, 2017). Given our research goals, this database was ideal because it contains a housing record, which includes detailed statistics on the characteristics of the surveyed housing unit, and a person record, which includes detailed statistics on every person in the surveyed housing unit. The two files are linked by a common serial number, which make possible "the study of people within the context of their families and other household members," that is, their living arrangements (American Community Survey Office, 2017).

Given this data structure, the household is our primary unit of analysis in this study. In the PUMS (and Census data more generally), a household consists of all the people who occupy a housing unit, whether living alone, in a family, or with unrelated individuals. For our purposes, any U.S. household with at least one person age 65 or older is considered an older adult household.

For vulnerable older adult households as just defined, we collected data from the housing record of the 2011–2015 PUMS file on the type of unit, units in the structure, when the structure was built, household income, and selected monthly

owner's cost. From the person record, we extracted data on the age, sex, race, personal income, type of health insurance, types of age-related difficulties, and relationships among all individuals in such households.

For benchmarking purposes, we also extracted these data for all U.S. older adult households and for all African American older adult households. Benchmarking against all African American older adult households was particularly important because the most vulnerable older adult households, as defined in this study, were African American in 2011–2015.

Profile of the most vulnerable older adult households

In 2011–2015, according to the ACS PUMS data, there were 1.6 million older-adult households that fit our definition of the most vulnerable when it comes to aging in place: that is, African American households that were renter occupied and/or cost-burdened irrespective of tenure status. Approximately 3.5 million persons lived in these households in 2011–2015 (Figure 1).

These most vulnerable households represented 5.3% of all U.S. older adult households and 5.3% of all persons living in such households in 2011–2015 (Table 1). By comparison, all African American older adults accounted for 9.3% of U.S. older adult households and 10.6% of all persons living in such households in 2011–2015.

In addition, as Table 2 shows, the most vulnerable older adult households represented 57% of all African American older adult households, and the individuals living in these most vulnerable older adult households accounted for 50% of all persons living in African American older adult households in 2011–2015.

The most vulnerable older adults (median age 72 years) were slightly younger than all U.S. older adults (median age 73). They were roughly the same age as all African American older adults (median age also 72). Why was this the case? Compared to all U.S. older adults, as Figure 2 shows, the most vulnerable older adults—and African American older adults more generally—were more likely to be

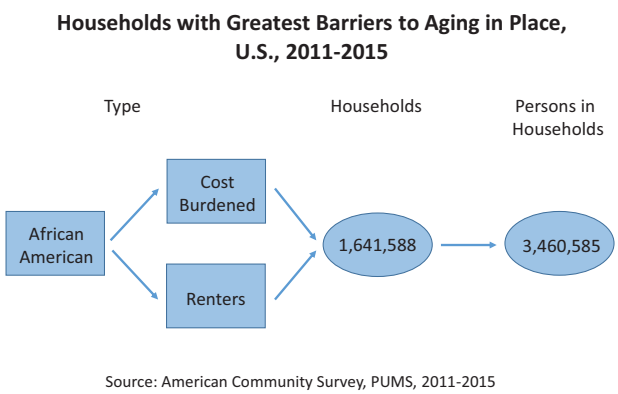


Figure 1. Households with greatest barriers to aging in place, United States, 2011–2015.

Table 1. U.S. older adult households and persons in households by type, 2011–2015.

Group	Households	Percent of total	Persons in households	Percent of total
All older adults	31,175,644	100.0	65,411,861	100.0
African American older adults	2,889,274	9.3	6,953,915	10.6
Most vulnerable older adults	1,641,588	5.3	3,460,585	5.3

Note. Source: American Community Survey, PUMS, 2011–2015.

Table 2. Most vulnerable as a share of all African American older adult households, 2011–2015.

Demographic	All African American older adult households	Most vulnerable older adult households	Most vulnerable share
Households	2,888,274	1,641,588	57%
Persons in households	6,953,915	3,460,585	50%

Note. Source: American Community Survey, PUMS, 2011–2015.

concentrated in the young old demographic (65–74) and less likely to be in the middle old (75–84) and oldest old (85+) demographics in 2011–2015.

Because males die at a higher rate than females at all ages, there is typically a sex ratio imbalance among the older adult population (more females than males), especially among the 85+ or oldest old population. As Figure 3 shows, this sex ratio imbalance was far more pronounced among the most vulnerable older adults (63% female) than it was among all U.S. older adults (56% female) and all African American older adults (60% female) in 2011–2015.

Not surprisingly, given this sex ratio imbalance, there were also marked differences in marital status across these three groups of older adults. The most vulnerable older adults, as Figure 4 shows, were far less likely to be married and far more likely to have never married or experienced family disruption (i.e., death of a

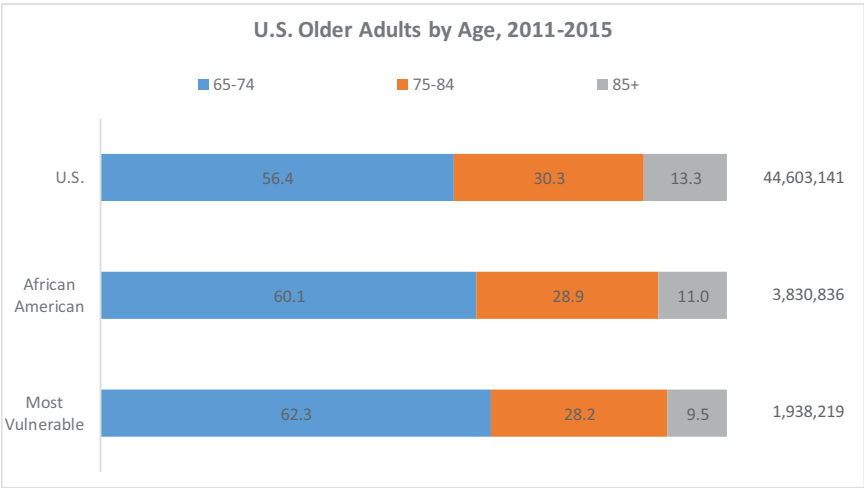


Figure 2. U.S. older adults by age, 2011–2015.

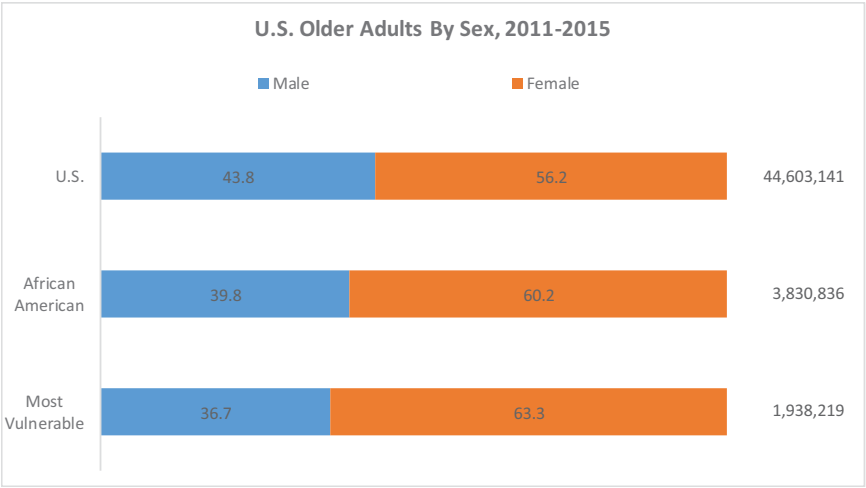


Figure 3. U.S. older adults by sex, 2011–2015.

spouse, divorce or legal separation) than all U.S. older adults and all African American older adults in 2011–2015.

A wide range of mobility constraints typically accompanies the aging process. All African American older adults (43.7%) and the most vulnerable older adults (44.9%) were almost equally as likely to report age-related difficulties. This finding was not surprising for two reasons. First, as previously noted, there was no difference in the median age of all African American older adults and the most vulnerable older adults. And second, irrespective of socioeconomic status, African Americans, as previously noted, typically experience disability earlier in the life course than whites (Freedman & Spillman, 2016).

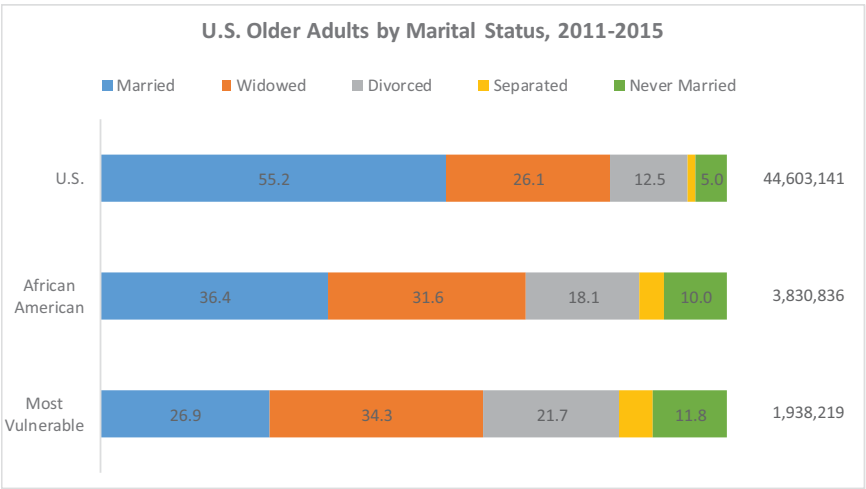


Figure 4. U.S. older adults by marital status, 2011–2015.

Most noteworthy, despite a lower median age, the most vulnerable older adults were significantly more likely than all U.S. older adults (44.9% versus 37.7%) to report age-related independent living and mobility constraints in 2011–2015. With regard to specific issues or difficulties that were major obstacles to aging in place, the most vulnerable older adults, as Table 3 shows, were more likely than all U.S. older adults to report challenges with a range of activities of daily living (ADLs) and instrumental activities of daily living (IADLs) in 2011–2015. They included difficulty dressing, vision difficulty, difficulty going out, physical difficulty, and difficulty remembering.

In addition to their own age-related difficulties, the most vulnerable older adults—and African American older adults more generally—also were more likely than all U.S. older adults to live in the oldest housing stock in 2011–2015. That is, as Figure 5 shows, these are structures built in 1969 or earlier, which probably will require major modifications to qualify as age-friendly dwelling units, if they are not altogether beyond repair (Williams, 2014). Older adults who live in these dwellings most likely are exposed to substantial health and safety risks, including lead-based paint, mold, mildew, and radon, as well as structural deficiencies that can lead to life-threatening accidental slips and falls (Heller, 2016).

Making matters worse, nearly half of the most vulnerable older adults (47%), compared to 19% of all U.S. older adults and 29% of all African American older adults, lived in multifamily housing or apartments in 2011–2015. This means, by extension, that they were more likely to be renters than homeowners (Figure 6). For renters, it is highly unlikely that private landlords would voluntarily make modifications beyond those required to comply with the Americans with Disability Act. And, if they were to do so, the cost would be passed on to these vulnerable older adults in the form of higher rents—an action that would either further constrain or negate their ability to age in place or force them to move.

Among older adults who were homeowners in 2011–2015, the most vulnerable older adults (10.9%) were less likely than all U.S. older adults (47.3%) and all African American older adults (30.2%) to own their dwelling units free and clear (Figure 7). Instead, they were more likely to own with a mortgage, which we know,

Table 3. Age-related difficulties reported by U.S. older adults, 2011–2015.

Type of difficulty	All U.S. older adults	All African American older adults	Most vulnerable older adults
Older adults reporting One or more age-related difficulties	37.7%	43.7%	44.9%
Difficulty dressing	10.5	14.5	12.8
Vision difficulty	7.1	9.9	10.6
Physical difficulty	24.9	33.1	34.1
Hearing difficulty	15.4	10.3	10.1
Difficulty going out	17.5	23.2	22.1
Difficulty remembering	10.7	14.5	13.4

Note. Source: American Community Survey, PUMS, 2011–2015.

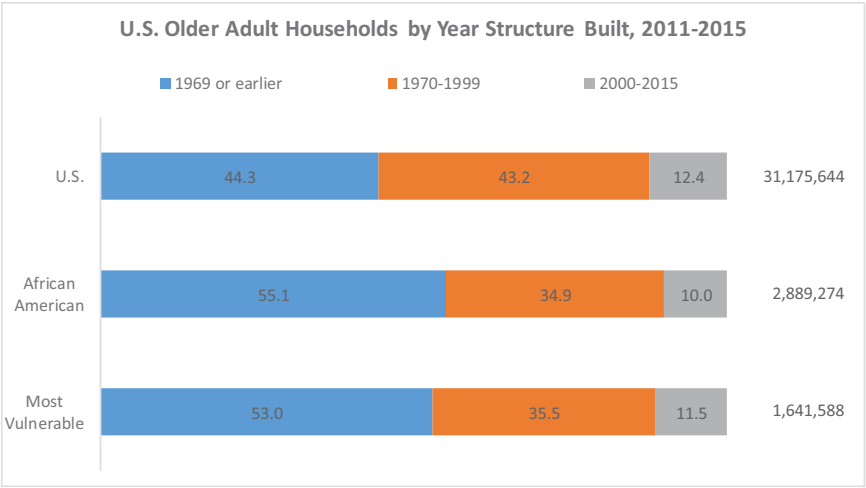


Figure 5. U.S. older adult households by year structure built, 2011–2015.

based on our selection criteria, consumed 30% or more of their monthly household income—a major financial barrier to maintaining insurance and paying property taxes (U.S. Department of Housing and Urban Development [HUD], 2013b), not to mention investing in age-friendly renovations or modifications on their homes.

Generational dynamics and living arrangements

Older adult households had a diverse mix of familial and nonfamilial residents in 2011–2015 (Table 4). Looking at all persons in such households in the aggregate, household relationships or composition did not vary significantly between all African American older adult households and the most vulnerable older adult households. But the most vulnerable older adult households—and all African American

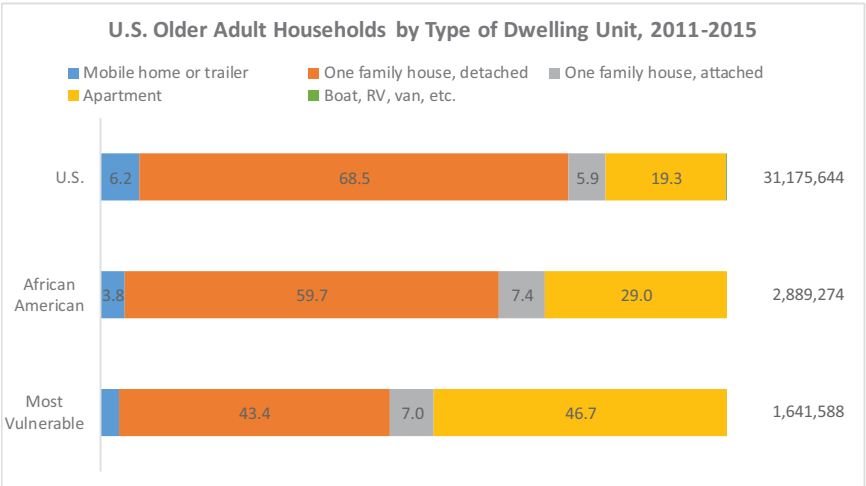


Figure 6. U.S. older adult households by type of dwelling unit, 2011–2015.

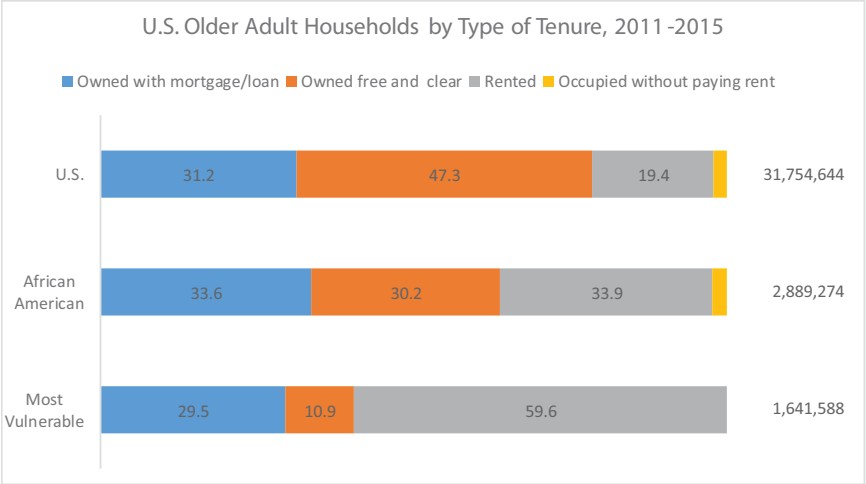


Figure 7. U.S. older adult households by type of tenure, 2011–2015.

older adults households more generally—were less likely to contain spouses and more likely to contain extended family members—sons or daughters, grandchildren, other relatives—and nonrelatives than all older adult households.

An in-depth analysis of these familial and other household relationships at the individual household level uncovered four distinct types of older adult households.

- One-generation households—exclusively older adults living alone or in group quarters.
- Two-generation households—one or more older adults and one or more of their biological offspring.
- Three-plus-generation households—one or more older adults, one or more of their biological offspring, and one or more of their grandchildren.

Table 4. Relationships within older adult households by type, 2011–2015.

Relationship	All older adults	All African American older adults	Most vulnerable older adults
All 65+ household members	65,915,735	6,953,915	3,460,585
Reference person	47.3%	41.5%	47.4%
Husband/wife	22.1%	12.3%	9.4%
Unmarried partner	0.9%	0.9%	1.0%
Son or daughter*	13.5%	19.8%	17.6%
Sibling	1.3%	2.3%	2.0%
Father or mother	3.8%	4.2%	4.4%
Grandchild	4.6%	10.4%	9.8%
In-laws**	1.9%	1.3%	0.9%
Other relatives	2.1%	4.2%	4.1%
Nonrelatives*** Includes roomer or boarder, housemate or roommate, foster child, other nonrelative.	2.5%	3.1%	3.3%

Note. Source: American Community Survey, PUMS, 2011–2015.
*Includes biological, adopted, and stepchildren.
**Includes parent-in-law, son-in-law, and daughter-in-law.
***Includes roomer or boarder, housemate or roommate, foster child, other nonrelative.

Table 5. Generational composition of u.s. older adult households, 2011–2015.

Household type	All older adult households	All African American older adult households	Most vulnerable older adult households
One generation	79.2%	96.7%	71.7%
Two generation	12.8%	1.8%	15.0%
Three generation	6.0%	0.9%	8.0%
Missing generation	2.0%	0.5%	5.3%

Note. Source: American Community Survey, PUMS, 2011–2015.

- Missing-generation households—one or more older adults and one or more of their grandchildren, with neither parent of grandchild(ren) present.[2]

Across our three groups—all older adults, all African American older adults, and the most vulnerable older adults—the majority were one-generation households in 2011–2015. But, as Table 5 shows, the most vulnerable older adult households (28.3%) were significantly more likely than all U.S. older adult households (20.8%) and all African American older adult households (3.3%) to contain multiple generations. How these various household forms may affect the ability for seniors to age in place remains unexamined, but the presence of informal care may be associated with greater ability to age in place.

Peering more deeply into the familial and nonfamilial relationships within and across these four older adult household types, we identified three unique living arrangements: households where older adults lived independently, households where older adults were caretakers of nonelderly family members, and households where older adults lived with nonelderly caregivers in 2011–2015.

Table 6 presents ACS data on the absolute and relative number of older adult households and persons in households across these different living arrangements for our three demographic groups. Independent living arrangements were slightly more common among all older adults (78%) and slightly less common among all African American older adults (66%) than they were among the most vulnerable older adults (72%) in 2011–2015. This means by extension that caretaker and

Table 6. Living arrangements of U.S. older adults, 2011–2015.

Unit	All older adults	African American older adults	Most vulnerable older adults
Households	31,175,644	2,889,274	1,641,588
Independent	78.2%	66.1%	71.7%
Caretaker	15.1%	26.1%	21.1%
Caregiver	6.7%	7.8%	7.2%
Persons in households	67,411,861	7,133,028	3,460,585
Independent	56.6%	40.0%	46.1%
Caretaker	27.0%	43.3%	38.7%
Caregiver	14.1%	14.1%	14.5%
One-generation GC	2.2%	2.5%	0%

Note. Source: American Community Survey, PUMS, 2011–2015.

[2]Cohn and Passel (2016) use the term "skipped generation" to describe these older adult households.

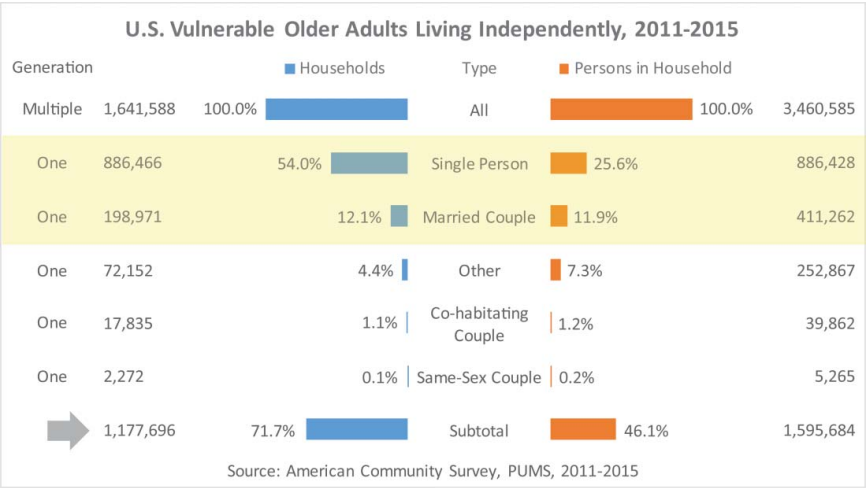


Figure 8. U.S. vulnerable older adults living independently, 2011–2015.

caregiver living arrangements were significantly less common among all older adult (21%) and slightly more common among all African American older adults (33%) than they were among the most vulnerable older adults (28%). For persons in older adult households, as Table 6 shows, the trends were very similar. In Figures 8 through 10, we explore the diverse living arrangements of the most vulnerable older adults in the greater detail.

Vulnerable older adults living independently were highly concentrated in one-generation, single-person and married-couple households. The remainder were in cohabitating and same-sex couple households, as well as communal living arrangements, that is, households made up of a mix of older siblings, other relatives, and nonrelatives living together under one roof (Figure 8).

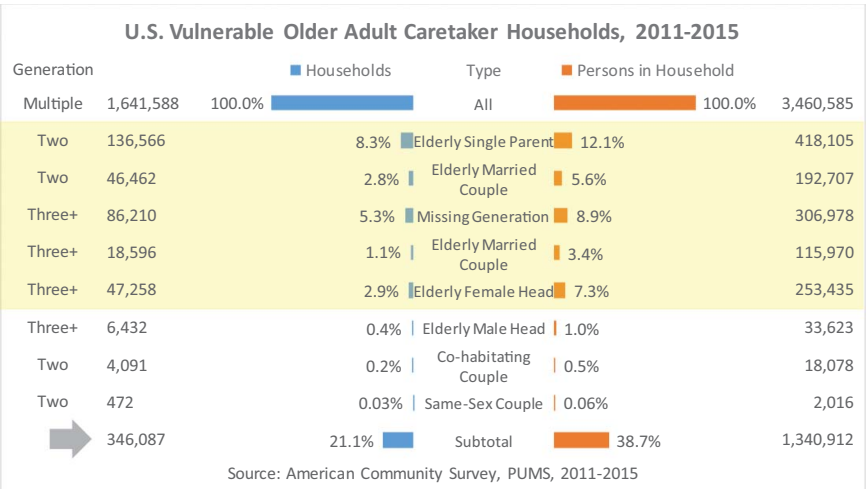


Figure 9. U.S. vulnerable older adult caretaker households, 2011–2015.

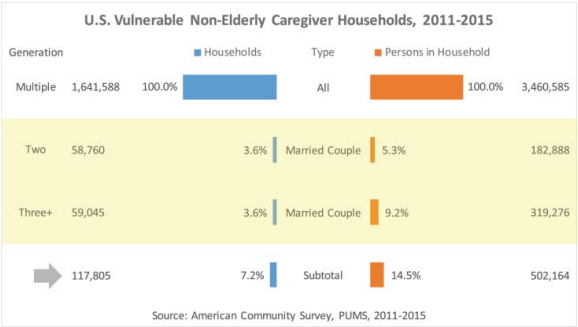


Figure 10. U.S. vulnerable nonelderly caregiver households, 2011–2015.

Vulnerable caretaker households were the most diverse in terms of living arrangements. They included elderly single parents and elderly married couples who were supporting their own adult child (two-generation households); elderly married couples and elderly female heads who were supporting their own adult child and grandchild or some other relative (three-generation households); and elderly couples who were supporting a grandchild in their home and neither of the biological parents of grandchild was present (missing-generation households).

Nonelderly caregivers made up the smallest share of the most vulnerable older adult households. As Figure 10 shows, these households were evenly split between married couples who were taking care of an older adult parent or parent-in-law (two-generation households) and married couples who were supporting their own biological child and an older adult parent or parent-in-law (three-generation living arrangement).

Aging in place challenges and barriers

Figure 11 presents a summary snapshot of the most vulnerable older adult households, the number of persons in such households, and their diverse living

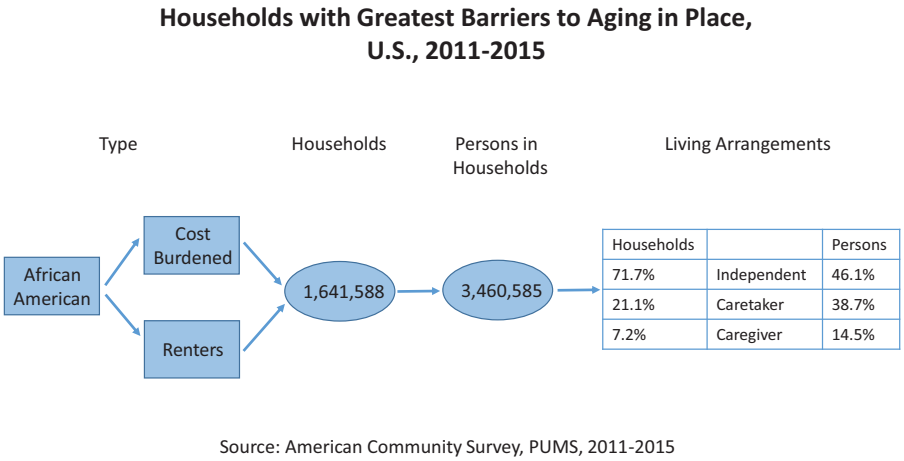


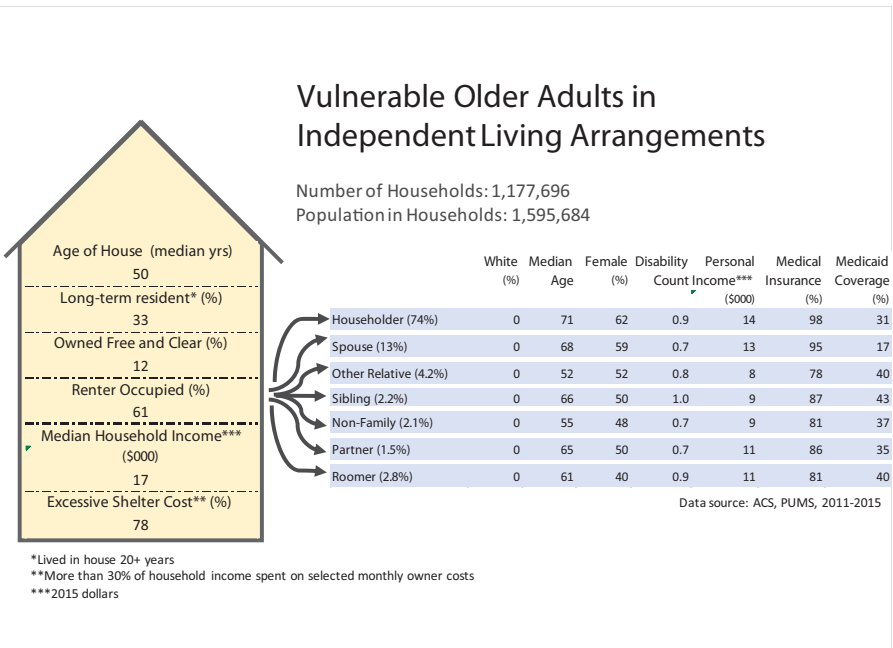
Figure 11. Households with greatest barriers to aging to place, United States, 2011–2015.

arrangements in 2011–2015. Based on our definition and conceptualization of the problem, the remaining unanswered question is: What specific barriers do these individuals and families face with regard to aging in place?

To answer this question for the 1.6 million most vulnerable older adult households, we extracted direct and indirect measures of the condition of their housing, the length of residence in the dwelling, their tenure status, median household income, and shelter costs from the housing record and linked them with selected sociodemographic indicators from the corresponding person record of the PUMS file. The results are depicted in Figures 12 through 14.

In 2011–2015, the most vulnerable older adults involved in independent living arrangements were predominantly renters (61%) who resided in mid-1960s-era housing (median age 50 years old). Only 12% owned their dwelling unit free and clear. One-third had lived in their current dwelling for 20 or more years. With a median household income of $17,000,[3] the majority (78%) spent in excess of 30% of their monthly income on housing in 2011–2015 (Figure 12).

These were households occupied primarily by single persons living alone—typically a female in her early 70s who was beginning to experience age-related challenges that will make it difficult for her to age in place. A small share was married couples, and in a few instances the householder shared the dwelling with a sibling (2%), other relative (4%), nonfamily member (2%), partner (1%), or roomer (3%)



	White (%)	Median Age	Female (%)	Disability Count	Personal Income*** ($000)	Medical Insurance (%)	Medicaid Coverage (%)
Householder (74%)	0	71	62	0.9	14	98	31
Spouse (13%)	0	68	59	0.7	13	95	17
Other Relative (4.2%)	0	52	52	0.8	8	78	40
Sibling (2.2%)	0	66	50	1.0	9	87	43
Non-Family (2.1%)	0	55	48	0.7	9	81	37
Partner (1.5%)	0	65	50	0.7	11	86	35
Roomer (2.8%)	0	61	40	0.9	11	81	40

Figure 12. Vulnerable older adults in independent living arrangements.

[3]Social Security (74%) and retirement programs (29%) were the major sources of this income.

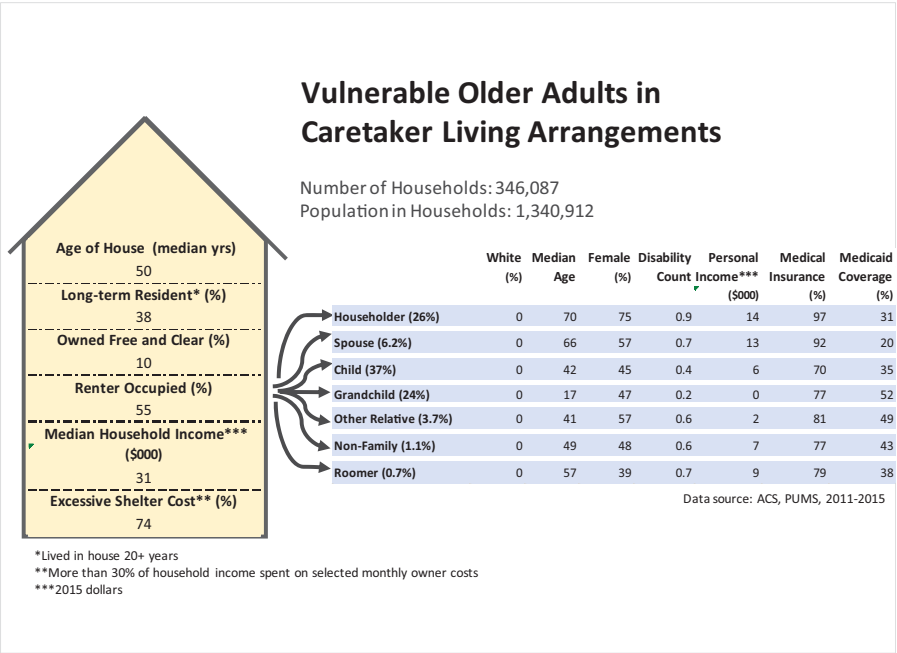


Figure 13. Vulnerable older adults in caretaker living arrangements.

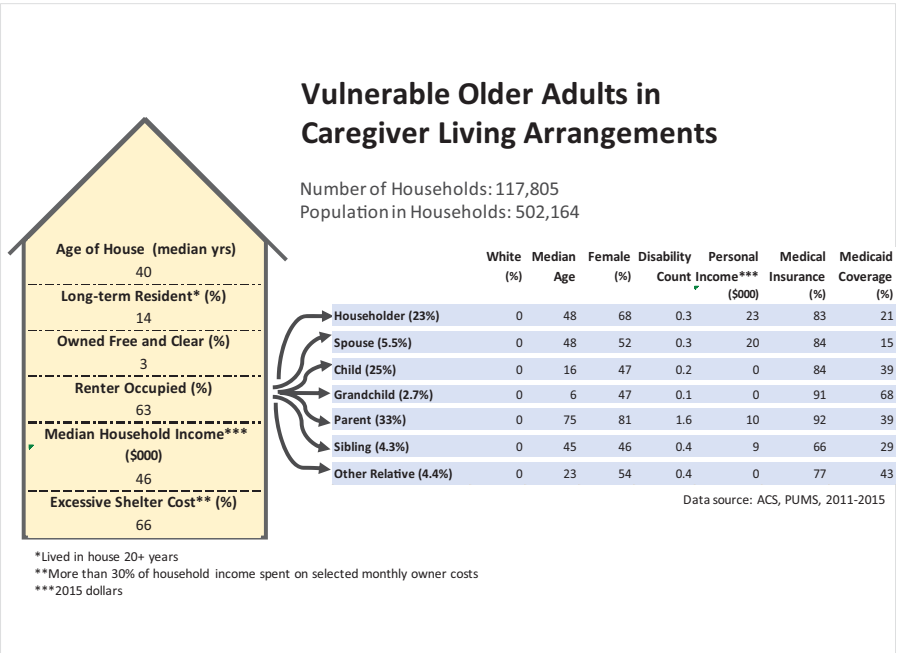


Figure 14. Vulnerable older adults in caregiver living arrangements.

Table 7. Selected characteristics of dependents in vulnerable older adult caretaker households, 2011–2015.

Characteristic	Child	Other relative
Median age	42	41
Percent not contributing to household finances	43	71
Percent widowed, divorced, separated, never married	92	82
Percent high school diploma, GED, or less	62	72
Percent last worked 5 years ago	36	43
Percent with a disability	22	25
Percent with wage and salary income past 12 months	42	20
Percent no health coverage	29	19

Note. Source: American Community Survey, PUMS, 2011–2015.

who also was elderly and beginning to manifest age-related mobility constraints. A significant percentage of these older adults relied on Medicaid for at least part of their health coverage. Proposed cuts to the Medicaid program in the Republicans' ongoing efforts to repeal and replace Obamacare, if enacted into law, will likely make matters much worse for these individuals and families.

In many respects, the circumstances of most vulnerable older adults who were involved in caretaker living arrangements were similar to those of their counterparts who lived independently in 2011–2015 (Figure 13). They, too, lived in some of the nation's oldest housing (median age of housing 50 years old), and more than half (55%) were renters with little or no control over the quality of their living environment. Only 10% owned their house free and clear, and excessive shelter cost was a problem for the majority (74%).

In these caretaker households, the household head was typically a female (75%) who, due to her stage in the life course (median age 70), was probably manifesting age-related mobility constraints (0.9 disability count). Nearly three-quarters of these households were burdened by excessive housing cost in part because the older adult household head was taking care of one or more dependent relatives—their own adult child (median age 42) who was typically a male (55%), a grandchild (median age 17) who also was typically male (53%), or, in a few instances, another adult relative (median age 41) who was typically female (57%).

Table 7 provides additional critical insights into why these older adult caretaker households faced major barriers to aging in place. Most of the adult dependent children and other relatives were either never married or had experienced a family disruption (death of a spouse, divorce, or legal separation (92% and 82%, respectively); most had at best a high school education (62% and 72%, respectively); between 3 (adult child) and 4 (other relative) out of 10 had not worked in the last 5 years; one-fifth (adult child) to one-quarter (other relative) suffered from some type of disability; 29% of the adult children and 19% of the other relatives had no health insurance[4]; less than half of the adult children (42%) and only 20% of the

[4]Close to one quarter of the grandchildren in these households did not have health coverage in 2011-2015. Among those who did have insurance, 52% were covered by Medicaid.

other relatives had wage and salary income in the past 12 months; and 43% of adult children and 71% of the other relatives were not contributing to household finances in 2011–2015. The financial burden of these households, in short, rested largely on the shoulders of the older adult household heads who reported a median personal income of $14,000 in 2015.[5]

For the most vulnerable nonelderly caregiver households, the occupied housing was not quite as old (median age of house 40 years old) as the units occupied by older adults living independently and older adult caretakers. Nevertheless, the units were probably old enough that major renovations will be required to transform them into age-friendly places to live. A much smaller percentage of these caregiver households were long-term residents of their current dwelling (14%, versus 33% and 38%, respectively, in the other two groups). Further, an even smaller percentage of caregiver households owned their house free and clear compared to the other two groups. Like the most vulnerable older adults living independently and in caretaker households, the majority of these caregiver households were renters who were burdened by excessive shelter cost—that is, they spent 30% or more of household income ($46,000 median) on selected monthly owner's cost.

These nonelderly caregiver households were typically headed by a female (68%) approaching middle age (median age 48) who was the caregiver for an older adult parent (33%)—typically a female (81%) in the middle-old demographic (median age 75) and experiencing age-related mobility constraints (1.6 disability count)[6]—and her own biological child—typically a male (53%) teen (median age 16). In a few instances, a spouse (5%), adult sibling (4%), other adult relative (4%), or grandchild (3%) was present in the household. Except in instances where a spouse was present, the other household members either had not earned any or earned only modest personal income in the past 12 months. Reflective of their low economic status, some of the persons living in these households, most notably the grandchildren (68%), relied on Medicaid for at least part of their insurance coverage—another source of vulnerability in the current political climate.

Summary, conclusions, and recommendations

For the 1.6 million most vulnerable older adult households, aging in place and community will be extremely difficult, if not impossible, unless innovative strategies and targeted policies are implemented to help them do so. If such actions are not taken to support the desires of these households to age in place, the cost of accidental slips and falls, hospitalizations and rehabilitation services, and long-

[5]Social Security (75%), retirement programs (30%), and wages and salary (20%) were the primary sources of income for these older adult household heads.

[6]The older adult's contribution to household income ($10,000 median) was mainly from Social Security (64%) and retirement programs (18%).

term supports and services in institutionalized settings will likely continue to spiral out of control, given the age-related challenges they face (i.e., their disability count) and the median age of the houses they occupy (CDC, 2016).

In 2011–2015, these most vulnerable older adult households, as we defined them, were headed by African Americans—typically African American females—who do not have sufficient financial assets to successfully age in place. They are a microcosm of the retirement crisis that African Americans face more generally (Brooks, 2017; Rhee, 2013; Sykes, 2016; Vinik, 2015). Their plight, in the words of Guzman and Vulimiri (2015), "stems from historical and contemporary policies and practices that result in disproportionately lower levels of employment, lower paying jobs, lower educational attainment, and lower ownership of assets such as homes or businesses" (also see Gassoumis et al., 2011).

Our analysis of the living arrangements of these most vulnerable older adult households revealed that they were primarily renters who lived in very old, mainly multifamily housing units in 2011–2015. For the most part, those who were homeowners did not own their homes free and clear and therefore were not in a position to leverage a reverse mortgage or some other financial tool to renovate their houses. Rather, they still had a mortgage or loan that imposed a financial strain on their economic well-being and severely constrained their ability to invest in age-friendly home modifications.

Further complicating matters, some—again typically African American older adult women—were taking care of adult children, grandchildren, and other relatives. For these dependent household members, research suggests that intergenerational social and economic mobility has been negated, limited, or stalled—in all likelihood by, among other forces, recession-induced employment dislocations, the housing foreclosure crisis, the war on drugs, the student debt crisis, and get-tough-on crime and education policies, as well as federal and state cuts in social safety-net programs (Abrahms, 2013; Carrns, 2016; Cohn & Passel, 2016; Fry & Passel, 2014; Gamboa, 2016; Lofquist, 2012). And for those nonelderly caregivers, the responsibility of taking care of an older adult parent or parent-in-law probably hindered their ability not only to invest in age-friendly home modifications for their elderly loved ones but also, as previous research suggests (HUD, 2013b), to save for their child's education and their own retirement.

Several strategies should be pursued to improve the likelihood that these most vulnerable older adult households can successfully age in place.

First, following New York City's lead, the federal government should create a guide for age-friendly building upgrades in the multifamily rental market (Kubey, 2016). In addition to specific recommendations that building owners can follow to make their properties more age-friendly, the guide also should include information about existing federal financial incentives, including the Disabled Access Tax Credit and the Business Expenses Tax Deduction, which cover at least some of the

cost of making age-friendly modifications to rental properties.[7] The guide also should provide links to state level programs and financial incentives (Shidaki, 2009; also see Irving, 2016).

Second, property and casualty insurance companies and their building owner clients should be encouraged to forge mutually beneficial strategic alliances to facilitate aging in place for older adult tenants. A case can be made that it is cheaper for property and casualty insurance companies to invest in modifications through their charitable foundations than to pay for costly litigation and medical expenses after an accidental slip or fall has occurred. This type of philanthro-capitalism on the part of property and casualty insurers would constitute a win–win–win for all parties involved (Bishop and Green, 2008).

Older adult tenants would benefit from a renovated, age-friendly living environment. Building owners would benefit from the increased value of their properties and reduced exposure to the risks associated with accidental slips and falls as well as other environmental hazards that exist in older buildings. And property and casualty insurers would benefit from the tax break or deduction associated with their charitable investments in aging in place, the economic value-add in the insurance market place for engaging in socially responsible business practices, while simultaneously maintaining a sound and profitable business relationship with insured building owners.

Third, the federal government also should expand funding and streamline the application process for the U.S. Department of Agriculture (USDA) Section 504 Home Repair program, which provides "grants to [rural] elderly very-low-income homeowners to remove health and safety hazards" (Collings & Feinberg, 2014). In expanding the program, the government should stipulate that renovations must be done by certified aging-in-place contractors and according to the universal design guidelines recommended by the National Homebuilders Association (Cook, 2016; HUD, 2013a). In addition, an urban equivalent of this program should be developed. It should be designed to address the needs of elderly homeowners burdened by excessive housing costs, including those involved in multigenerational living arrangements (Timberlake & Coleman, 2016). To scale this program, the government should leverage the capabilities and expertise of Habitat for Humanity, National Church Residences, and other nonprofits, including mega-churches, that are already engaged in efforts to provide safe housing for older adults (National Church Residences, 2017; Habitat for Humanity, 2017; Mullaney, 2016).

Fourth, since a significant number of the most vulnerable older adult households rely on Medicaid for long-term supports and services, senior advocates must make every effort to block proposed cuts and lobby forcefully for increased federal funding for the program (Levey, 2017; The Editorial Board, 2017). And states that have not done so should embrace Medicaid expansion (Atkins, 2016; Atkins,

[7]Congress should consider implementing a tax credit to facilitate aging in place for older adult homeowners (Fay, 2015).

Tumlinson, & Dawson, 2016), with a specific eye toward leveraging Medicaid Home and Community Based-Waivers Programs to complete home modifications that will facilitate aging in place for some of our most vulnerable older adults (Centers for Medicare & Medicaid Services, 2015; HUD, 2013b). Since Medicaid covers long-term care for many seniors, extension of aging in place will reduce these costs (HUD, 2013b; Johnson & Parnell, 2016; Marek et al., 2012).

In addition, for multigenerational older adult households, states and local communities should leverage these Medicaid waiver programs to create a funding pool to be invested in compulsory education for the in-home relatives of older adults to be trained as nonmedical caregivers and paid for their caregiving roles (Blumenthal, 2014). This is likely to be a much cheaper option than institutionalized care (Genworth Financial, 2017), and it would acknowledge in a tangible way the value that unpaid caregivers contribute to society today (Burnette, 2017; Poo & Whitlatch, 2016; Stone, 2016; Lofquist, 2012).

Finally, the federal government, perhaps through the CMS Innovation Center, should create an aging-in-place social innovation fund that would invest in social purpose business ventures that demonstrate the greatest potential or capacity for helping the most vulnerable older adults age in their homes and in their communities. Given that those most in need of aging in place assistance are predominantly older women who live alone (see Figure 12), often in older houses that are beyond rehabilitation, priority should be given to viable business plans that propose to build clusters of affordable, age-friendly tiny homes (rural communities) and tiny home villages (urban communities). The layout of the houses should be age-friendly, and they should be constructed around a community center that is designed to promote daily interaction and thereby combat the isolation, loneliness, and abuse problems that affect older adults who live alone today (Mosqueda, Hirst, & Sabatino, 2016). Such communities, properly designed, can help older adults age in the "right" place (Adamson, 2016; Golant, 2015).

Targeting infill sites in cities for such developments can potentially contribute to the creation of mixed income, multigenerational communities that would serve as an antidote to much of the gentrification that is currently pricing older adults out of many urban communities (Lawler, 2015; Liepelt, 2017). In rural communities and small towns, such developments would facilitate better medical and nonmedical caregiving support for older adults (Stone, 2016).

In 2015, AARP, in collaboration with J.P. Morgan Chase as asset manager, launched a $40 million "'innovation fund' to invest in technological innovations focused on improving the lives of people 50-plus" (Chew, 2015). By obligating or dedicating a specified amount of its fund to this type of initiative, AARP could play a major role in mobilizing the requisite bipartisan Congressional support required to enact federal legislation. And once such legislation is enacted and funds are appropriated to create such a fund, the federal government should in turn use its investments to leverage additional philanthropic and corporate dollars,

including existing angel investment and social venture pools, to grow the fund.[8] Given the magnitude of the problem, dollars from all of these sources will be required to ensure that aging in a place is an option for as many of our most vulnerable older adults as possible. Other nonprofit, public-sector and private sector organizations have key roles in establishing needed senior housing efforts.

In view of the strong emphasis on entrepreneurial education today, the federal government, in launching such a fund, should consider working with top U.S. business schools to vet new venture ideas—from both the twenty-somethings and encore entrepreneurs. AARP has already created a strategy for how this might be done (AARP, 2017).

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[8]Existing venture competitions that can be leveraged include the Stanford Center on Longevity Design Challenge, the National Academy of Medicine Grand Challenge in Healthy Longevity, Silicon Valley Boomer Venture Summit, the Palo Alto Longevity Prize, Aging 2.0 Global Network of Innovators, IAGG Tech Day 2017, and What's Next Boomer Summit.

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