Medicare's Home Health Benefits and Elderly Living Arrangements

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Abstract

This paper examines the extent to which access to Medicare's home health care benefits influences the utilization of home health care services and the likelihood of co-residence among the elderly population. Using a regression discontinuity design (RDD) that exploits the sharp eligibility threshold at age 65, I find that Medicare eligibility leads to an 11-percentage-point increase in home health care use among less healthy, single elderly individuals, with no significant effects for healthier or married individuals. I also identify significant racial heterogeneity in the effect of home health care use on co-residence: an increase in home health care use reduces co-residence by 3 percentage points among less healthy, single Black elderly individuals, while no significant changes are observed for White, Hispanic, or other racial groups. These effects are concentrated in the second quartile of the income distribution. These findings suggest that expanded Medicare eligibility for home health care benefits can meaningfully influence care utilization patterns and living arrangements among vulnerable elderly subpopulations.

I. Introduction

The global population is aging at an unprecedented rate. According to the National Institutes of Health (NIH), the proportion of people over 65 years old will double from 8.5% in 2015 to 17% by 2050. This rapid growth raises important concerns about the living arrangements of older adults. A 2010 survey by the American Association of Retired Persons (AARP) found that 90% of Americans aged 65 and older prefer to remain in their homes as they age, rather than move to a nursing home or assisted living facility. However, living at home can pose significant challenges for older adults with chronic health conditions that limit their ability to live independently, as well as for their families when affordable home health care is unavailable. For these individuals, aging in place may lead to a mismatch between actual and preferred living arrangements. Although most older adults in the U.S. prefer to live alone to maintain privacy, families often form co-resident households to control costs and ease the burden of caregiving when affordable home health care is not accessible (Brody et al., 1995; Klinenberg, 2012). This discordance can create significant stress, potentially harming the physical and emotional well-being of older adults (Abalos, 2018; Caplan, 1987; Hermalin and Yang, 2004; Kahana and Kahana, 1996). Family caregiving also imposes substantial costs on caregivers. It can reduce their likelihood of remaining in the labor market and lower the wages of those who continue to work (Skira, 2015; Van Houtven et al., 2013). Moreover, caregiving responsibilities may result in severe and long-term physical and psychological consequences for caregivers (Pinquart and Sörensen, 2003; Hirst, 2005; Schulz and Sherwood, 2008).

Recognizing the desire of older adults to age in place and the potential negative consequences of informal caregiving, government programs such as Medicaid and Medicare home health care have been developed to provide greater flexibility in choosing living arrangements while also reducing the burden on families. Medicaid and Medicare are the two largest payers of long-term services and supports (LTSS), including home health care. In 2020, these programs together accounted for 60.4% of all LTSS spending (Colello, 2022). Therefore,

understanding how public care arrangements affect home health care utilization and living arrangements provides valuable insights for improving the well-being of both older adults and their caregivers. Specifically, this paper employs a regression discontinuity design (RDD) to examine how access to Medicare's home health care benefits influences the utilization of home health care services and the likelihood of co-residence among older adults. The approach is divided into two steps. First, I use 2001-2019 survey data from the Medical Expenditure Panel Survey (MEPS) to examine whether changes in Medicare eligibility at age 65 induce changes in home health care use. Second, I supplement this analysis with 2008-2019 data from the American Community Survey (ACS) to determine whether the age threshold affects the likelihood of co-residence. The approach I take involves two steps. First, I use 2001-2019 survey data from the Medical Expenditure Panel Survey (MEPS) to examine whether changes in Medicare eligibility at age 65 induce any changes in home health care use. Second, I supplement this data with 2008-2019 data from the American Community Survey (ACS) to examine whether the likelihood of co-residence changes at the age threshold.

I find that the increase in Medicare coverage at age 65 induces an 11-percentage-point increase in the likelihood of using home health care among less healthy singles but has no effect on relatively healthy singles. This increase is driven by less healthy singles with relatively low, though not the lowest, incomes—namely, those in the second quartile of the income distribution. One possible explanation is that individuals in the bottom income quartile are more likely to qualify for Medicaid, a means-tested program that covers home health care and targets low-income individuals regardless of age. I also show that the increase in home health care use has no statistically significant effect on living arrangements among less healthy singles. However, there is heterogeneity in treatment effects across racial groups and gender. For less healthy, single Black individuals, access to Medicare's home health care benefits at age 65 reduces the likelihood of co-residence by 3 percentage points. This effect is concentrated among single Black individuals, particularly single Black females, in the second income quartile. In contrast, for other racial groups, the likelihood of co-residence does not

change at the age threshold. Additionally, I show that neither home health care use nor co-residence changes at age 65 for both relatively healthy and less healthy married individuals. A large body of literature highlights that spouses and children are the most common informal caregivers for married and single individuals in need of caregiving, respectively (Barrett and Lynch, 1999; Johnson and Catalano, 1981; Longino and Lipman, 1981; Pinquart and Sörensen, 2015; Thornton et al., 1993). The difference in responsiveness between married and single elderly individuals to reduced home health care costs suggests that home health care may be less of a substitute for informal care provided by spouses than for care provided by children. This could be because individuals place a high value on privacy, or because spouses, as caregivers, face lower opportunity costs than children or more distant relatives.

My work relates to the literature that examines the impact of public transfers on older people's living arrangements. Engelhardt and Greenhalgh-Stanley (2010) leverage the 1997 introduction of the Interim Payment System (IPS) for Medicare's home health care, which significantly reduced Medicare's home health care expenditures and usage, to examine its short-term impact on older people's living arrangements. The authors estimate that the elasticity of co-residence with respect to Medicare's home health care benefits is -0.9 for widowed individuals. They also show that for higher-income and less healthy widowed individuals, who are unlikely to qualify for Medicaid, the elasticity is -2.22. These findings suggest that older people's living arrangements are highly responsive to changes in home health care availability. Other U.S. studies in the living arrangement literature rely on older datasets and show that public transfers aimed at improving older people's economic well-being—such as Union Army pensions for Civil War veterans and Social Security—decrease the likelihood of co-residence (Costa, 1997; Engelhardt et al., 2005; McGarry and Schoeni, 2000). Studies from other countries reach similar conclusions. Hsieh et al. (2010) show that the introduction of National Health Insurance (NHI) in Taiwan in 1995 reduced the likelihood of intergenerational co-residence by 6.6%. However, they also report significant heterogeneity in treatment effects across subsamples. For households with less healthy moth-

ers and three or fewer children, the NHI increases the likelihood of co-residence, whereas for households with less healthy mothers and more than three children, it decreases the likelihood of co-residence. Similarly, Takagi et al. (2007) find that greater accessibility to public services, such as home care, day care, and short-stay services, reduces the likelihood of intergenerational co-residence in Japan.

My finding that the living arrangements of single older adults are largely insensitive to Medicare's home health care benefits today, except for one particular subpopulation—less healthy, single Black individuals in the second income quartile—contrasts with findings from previous studies that public transfers had large effects on older people's living arrangements in the mid- and late-1990s. Together, these results suggest that the expansion of the social safety net and the increase in income levels in the U.S. over the past decades may have generally allowed for greater flexibility in choosing living arrangements, such that Medicare now plays a less critical role in determining living arrangements for older adults. Nevertheless, my finding that there is an increase in the likelihood of using home health care at age 65 for less healthy singles implies that Medicare still plays an important role in providing access to home health care, which may, in turn, help ease the burden on family caregivers (Schacke and Zank, 2006; Unger et al., 2021).

The remainder of this paper proceeds as follows. Section II provides background on Medicare's home health care benefits and briefly discusses Medicaid's home health care and nursing home benefits, given Medicaid's close relationship to Medicare. Section III describes the data used in the analysis. Section IV outlines the empirical framework. Section V presents the results. Section VI concludes.

II. Background

II.A. Medicare's Home Health Care Benefits

Medicare has been providing home health care benefits since its inception in 1965. However, these benefits were more limited compared to today. Medicare Part A, which generally covers inpatient stays, covered home health services for up to 100 days annually for individuals who were hospitalized for at least 3 days immediately prior to receiving home health care. Medicare Part B, which covers outpatient expenses, had the same annual visit cap as Part A and required a $60 deductible and a 20% coinsurance, but it did not have the hospitalization requirement. Individuals had to be homebound and in need of intermittent skilled care in order for Medicare to cover home health care. In addition, they had to have a physician review their care plans, and the care must be delivered by a Medicare-certified home health care agency.

Between 1972 and 2000, Medicare's home health care underwent several reforms, each followed by either a program expansion or contraction, in the continuous attempts made by Centers for Medicare and Medicaid Services (CMS) to establish consistent standards for providing need-based home health care while creating appropriate limits on use of the benefits to control costs. In 1972, amendments to Social Security eliminated the coinsurance requirement under Part B and expanded eligibility to those who were eligible for Social Security Disability. In 1980, the Omnibus Budget Reconciliation Act (OBRA) eliminated the Part A annual visit cap and prior hospitalization requirements and Part B deductible. The Act also allowed more for-profit agencies to enter the market by removing the state licensure requirement for these agencies. Between 1984 and 1986, two Centers for Medicare and Medicaid Services (CMS) transmittals aimed at improving overall system monitoring and administration caused a decrease in home health care use. In 1987, as the result of the Duggan v. Bowen class lawsuit, CMS was forced to relax the eligibility criteria for home health care, which caused home health care benefits to become available to beneficiaries

with more chronic health conditions. In 1997, as a measure to control costs, the Balanced Budget Act mandated CMS to temporarily switch from the retrospective payment system (RPS) to an interim payment system (IPS) and ultimately to a prospective payment system (PPS) for home health care. Initially, many agencies experienced financial instability as a result of the adoption of the new reimbursement system and exited the market. In 2000, the CMS implemented the PPS, and as agencies quickly regained financial stability, the program continued to grow (Davitt and Choi, 2008). Since 2001, policies regarding Medicare's home health care have been relatively stable.

II.B. Medicaid's Home Health Care and Nursing Home Benefits

Medicaid pays for in-home care for individuals who meet certain eligibility criteria in terms of functional and financial needs. Federal law requires each state to offer home health care as part of the state Medicaid plan. States may also offer home health care through Home and Community Based Services (HCBS) waivers. These waivers generally provide more in-home benefits and allow higher income limits than the regular state plans. However, since states are able to cap enrollment because these waivers are not entitlement programs, most states have a waiting list. In addition, these waivers generally require individuals to demonstrate a need for a higher level of care that is equivalent to a nursing home level of care than the regular state plans. Medicaid also pays for nursing home care for individuals who demonstrate a need for this level of care as long as they meet certain financial eligibility requirements that depend on their state of residence and marital status. For those who are eligible, Medicaid covers nursing home care at 100% for as long as needed.

III. Data

One of the main sources of data for my analysis is the Medical Expenditure Panel Survey (MEPS). MEPS is an ongoing survey that began to collect health and health care infor-

mation from representative samples of the U.S. civilian, non-institutionalized population in 1996. The survey consists of three major components: The Household Component (HC), the Insurance Component (IC), and the Medical Provider Component (MPC). HC collects information from individuals in the sampled households on their demographic characteristics, health status, healthcare utilization and expenditure, insurance coverage, and income. IC collects information from sampled employers on the health insurance plans they provide to their employees. MPC collects supplemental health care information from the providers of the sampled households in HC. I construct from HC data an indicator that shows whether an individual uses any home health care. This data set also contains information on informal care utilization. However, since people are only asked to report informal care they receive from caregivers who do not co-reside with them, which means that the complete picture of informal care utilization is missing, I only focus on home health care in my analysis. Following Card et al. (2008), my sample consists of individuals aged between 55 and 75 surveyed between 2001 and 2019. I exclude individuals surveyed before 2001 from my analysis because there were frequent policy changes regarding Medicare's home health care benefits prior to 2001, which means that including these individuals may bias the estimates of the current effects of the benefits. Second, I exclude individuals surveyed after 2019 from my analysis to get rid of any potential impact of COVID-19. I also construct an indicator that shows whether an individual is relatively healthy or less healthy based on self-reported health status and health conditions. In my analysis, I define an individual to be less healthy if she has any chronic health conditions or limitations such as cognitive, physical, or functional limitations that put her at high risk for failing to perform Activities of Daily Living (ADLs) or Instrumental activities of daily living (IADLs) and becoming homebound. This classification allows me to test the assumption that if Medicare induces more people to use home health care, then the effect would be concentrated among less healthy individuals who are more likely than their relatively healthy counterpart to be in need of and eligible for the benefits.

The second source of data for my analysis is the American Community Survey (ACS). ACS is an annual survey that collects information from representative samples of the U.S. population on demographic characteristics, health status, income, employment, and housing. The advantage of this data set over MEPS is that it has a much larger sample. However, ACS does not collect information on home health care utilization. Therefore, I supplement MEPS with ACS to conduct my second-stage analysis of living arrangements. I construct from ACS data an indicator that shows whether a household is a co-resident household. In my main analysis, I define a co-resident household to be a household in which besides the individual between the ages of 55 and 75 and her spouse or partner, there is at least one other individual older than 30 in the household. This age threshold accounts for the possibility that some recent college graduates may choose to return home after graduation for various reasons such as easing financial burdens. These households are unlikely to be affected by Medicare's home health care because caregiving is not the reason for shared living. This measure treats such households as non co-resident households. In the robustness check, I lower the age threshold to 18. My sample consists of individuals aged between 55 and 75 surveyed between 2008 and 2019 because ACS did not collect information on Medicare and Medicaid before 2008. Similarly to MEPS, I construct two subsamples based on self-reported health status and conditions.

The last source of data for my analysis is the 1980 Census. This data set contains similar information as ACS. Since prior to the implementation of OBRA in 1981, Medicare's home health benefits were less generous and beneficiaries of Medicare's home health benefits represented a smaller proportion of the elderly population than today, I use data from the 1980 Census to conduct a falsification test where the assumption is that the change in the likelihood of co-residence at age 65 in 1980 is smaller than the change today. There are two caveats. First, the elasticity of co-residence to Medicare's home health care benefits may be higher in 1980 than today because of the generally weaker social safety net in 1980, which may to a certain extent weaken the comparability of the estimates. Therefore, we should interpret

the 1980 estimate as an upper bound of the counterfactual effect of more limited Medicare's home health care benefits on living arrangements in today's society. Second, the 1980 Census has very limited health-related information. The only health-related information available is whether an individual has any physical or mental health conditions that prevent her from using public transportation. Therefore, I use this alternative definition to construct my subsamples.

Table 1 reports summary statistics for the MEPS, ACS, and 1980 Census samples of single and married individuals aged between 55 and 75. Column (1) corresponds to the MEPS sample of single elderly, which consists of over 20,000 observations weighted by person-weights. The sample is mostly white and female, and the average annual personal income is about $35,000 (in 2009 $). 91% of the sample has health insurance, and 18% is enrolled in Medicaid. 16% of the sample is in relatively poor health. 6% of the sample uses home health care. Column (2) corresponds to the MEPS sample of married elderly. The sample is mostly white, and the average family income is about $80,000 (in 2009 $). 95% of the sample has health insurance, and 5% is enrolled in Medicaid. 10% of the sample is in relatively poor health. 3% of the sample uses home health care. Columns (3)-(6) report similar statistics for the ACS and 1980 Census samples. Of note, column (5) shows that on average 25% of single elderly lived in a co-resident household in 1980, whereas column (3) shows that 30% lived in a co-resident household between 2008 and 2019. This increase in co-residence is mainly due to the shifting demographics where there has been a rapid growth in the Hispanic population that has a higher-than-average co-residence rate. For both whites and blacks, there is a decrease in co-residence.

IV. Empirical Framework

To explore the impact of Medicare's home health care on co-residence, I use a regression discontinuity design (RDD) to examine whether there is any change in home health care use

and co-residence at age 65 at which all individuals become eligible for Medicare. I run the following model specification:

$$\begin{aligned} y_i =& \beta_0 + \beta_1 Post65_i + \beta_2(Age_i - 65) + \beta_3 Post65_i \times (Age_i - 65) + \beta_4(Age_i - 65)^2 + \\ & \beta_5 Post65_i \times (Age_i - 65)^2 + \beta_6 \boldsymbol{X_i} + \lambda_r + \lambda_t + \epsilon_i \end{aligned} \tag{1}$$

in which i indexes the individual, r the region or state, and t the survey year. In the main results, y_i is either an indicator for home health care use or co-residence. I additionally run a specification in which y_i is an indicator for Medicaid coverage. $Post65_i$ is an indicator for whether the individual is 65 or older, and β_1 is the main coefficient of interest. Age_i is the individual's age in years for the MEPS and ACS sample and age in quarters for the 1980 Census sample.[1] $\boldsymbol{X_i}$ is a set of individual-level controls such as gender, race, and educational attainment, and race-ethnicity category. λ_r is a set of region fixed effects for the MEPS sample and state fixed effects for the ACS and 1980 Census samples. λ_t is a set of survey year fixed effects. All specifications include a quadratic in age that is fully interacted with the post-65 dummy. In addition, all specifications are adjusted using person-level weights.

Figure 1 shows the changes in health insurance and Medicare coverage at age 65 for the ACS sample. Panel (a) shows that there is a 7.5-percentage point increase in health insurance coverage at the age threshold. Panel (b) shows that there is a 67.9-percentage point increase in Medicare coverage at the age threshold. Figure 2 shows the changes in health insurance and Medicare coverage at age 65 for a similarly constructed National Health Interview Survey (NHIS) sample. The running variable in Panels (a) and (b) is age in years, whereas the running variable in Panels (c) and (d) is age in quarters. Both produce estimates similar in size to the estimates for the ACS sample. Since Medicare coverage does not increase from 0 to 100 percent at age 65, β_1 should be interpreted as a scaled estimate of the effect of Medicare coverage where the scale factor is the difference in the probability of treatment on

[1] In the 1980 Census specification, the individual's age is measured in quarters since the Census was conducted on April 1, 1980, and information on quarter of birth is available. In the MEPS and ACS specifications, the individual's age is measured in years instead due to data limitations.

either side of the threshold.

In my analysis, I examine single and married individuals separately following the convention in the living arrangement literature. The following example illustrates the approach I take: suppose a co-resident household consists of an individual, her spouse, and her single sibling who are all aged between 55 and 75, then the sibling would be included in the regression for singles, whereas the older person between the individual and her spouse would be included in the regression for married individuals. In addition, I construct an income distribution based on CPI-adjusted total pre-tax personal income for single individuals and an income distribution based on CPI-adjusted total pre-tax family income for married individuals. Following Corina (2018) and Engelhardt and Greenhalgh-Stanley (2010), I examine individuals at different positions of the income distribution separately to test the assumption that individuals at the bottom or top of the income distribution are less affected by Medicare's home health care than individuals in the middle of the income distribution. This assumption is based on the observations that individuals with extremely low income are able to get free home health care through Medicaid and that individuals with high income would face little financial constraints that may prevent them from purchasing home health care. [2]

V. Results

V.A. Main Results

Table 3 reports estimates of the effect of changes in Medicare eligibility on home health care use for single individuals. Column (1) of Panel A shows that changes in Medicare eligibility have a small positive and imprecisely estimated overall effect on home health care use for single individuals. Columns (2) and (3) show that there is heterogeneity of treatment effects across health groups. Column (2) of Panel A shows that for relatively

[2] A wealth distribution would be better suited for my analysis. However, the data sets in my analysis do not collect information on individuals' wealth. Therefore, I use individuals' income as a proxy for their wealth.

healthy singles, the effect of changes in Medicare eligibility on home health care use is very small and imprecisely estimated. Panel (a) of Figure 3 presents the corresponding graphical illustration. Column (3) of Panel A shows that for less healthy singles, changes in Medicare eligibility has a large positive and significant effect on home health care use. The coefficient implies that changes in Medicare eligibility at age 65 induces an 11-percentage point increase in home health care use for this group. This is a 72.5% increase from a base of 14.9% of less healthy singles using any home health care. Panel (b) of Figure 3 presents the corresponding graphical illustration. Column (3) of Panel C shows that this effect is driven by less healthy singles in the second income quartile. The coefficient implies that changes in Medicare eligibility induce a 22.6-parentage point increase in home health care use for this group. Figure 4 presents the corresponding graphical illustration. Column (3) of Panel B shows that for less healthy singles in the bottom income quartile, there is an increase in home health care use at age 65 that is insignificant and only half the size of the increase in home health care use for less healthy singles in the second income quartile. This may be because that people with very low income are more likely to get access to free home health care through Medicaid. Engelhardt and Greenhalgh-Stanley (2010) offer the same explanation for their finding that Medicare's home health care benefits do not affect the likelihood of co-residence for the widowed elderly in the bottom income quartile without testing it. Figure 5 shows that 47.6% of individuals in the bottom income quartile are enrolled in Medicaid, whereas only 21.4%, 7.1%, and 3.6% of individuals in the top three income quartiles are enrolled in Medicaid, respectively. In addition, after adding a dummy variable for Medicaid coverage and an interaction term between the Medicaid and post 65 dummies to Equation (1), the coefficient on the Medicaid dummy shows that being enrolled in Medicaid increases the probability of using home health care by 2.7 percentage points for single individuals below age 65. The coefficient on the interaction term is negative and significant, which means that the change in home health care use at age 65 is smaller for individuals who are enrolled in Medicaid than individuals without Medicaid. These findings support the above explanation.

Overall, these results suggest that less healthy singles with relatively low income are very responsive to the reduction in home health care prices brought by Medicare, whereas those who are relatively healthy and have relatively high income are not. This may be explained by the following two observations. First, less healthy people are more likely than their relatively healthy counterpart to be in need of and eligible for Medicare's home health care. Second, people with relatively low income are more likely than their higher-income counterpart to face financial constraints that prevent them from getting home health care services when the out-of-pocket costs are high.

Table 4 reports estimates of the effect of changes in Medicare eligibility on home health care use for married individuals. Column (1) of Panel A shows that changes in Medicare eligibility have a small positive and imprecisely estimated overall effect on home health care use for married individuals. Columns (2) and (3) show that the effects are also small and imprecisely estimated for less healthy and relatively healthy married individuals, respectively. Figure 6 presents the corresponding graphical illustration. These results imply that married individuals are less responsive to the reduction in home health care prices than single individuals. Since married and single individuals most often get informal care from their spouses and children, respectively, the ways in which they respond to the home health care price reduction may suggest that married individuals may prefer informal care provided by their spouses over home health care, whereas singles may prefer home health care over informal care provided by their children. Some plausible explanations for the difference in preferences could be that older people may place a high value on privacy and that spouses may face lower opportunity costs associated with caregiving than children.

Tables 5 and 6 present my second-stage results regarding co-residence for less healthy and relatively unhealthy single individuals, respectively.[3] Table 5 reports estimates of the effect of access to Medicare's home health care on the likelihood of co-residence for less

[3]This paper omits the discussion of the co-residence results for married individuals. Estimates show that there is no change in co-residence for married individuals, which is in line with the literature and with my finding that there is no change in home health care use for married individuals at age 65.

healthy single individuals. Column (1) of Panel A shows that there is a small negative and imprecisely estimated overall effect for less healthy singles. Figure 7 shows that blacks have the highest home health care utilization among all racial groups. The differences in home health care utilization across racial groups may reflect the racial differences in unmet needs for formal care and thus flexibility in choosing a living arrangement, which may in turn induce different degrees of elasticity of co-residence to Medicare's home health care benefits across racial groups. Column (3) shows that there is a negative and marginally significant effect for less healthy single blacks. The coefficient implies that Medicare's home health care reduces the likelihood of co-residence by 3.0 percentage points for less healthy single blacks. This effect is concentrated among less healthy single blacks in the second income quartile where there is an 8.1-percentage point decrease in the likelihood of co-residence. Figure 8 presents the corresponding graphical illustration. Columns (1) and (4) show that the effects of Medicare's home health care on co-residence are relatively small and imprecisely estimated for whites and other racial groups. These results are in line with the home health care use result that the increase in home health care use among less healthy singles is driven by those in the second income quartile. Subsample analysis by gender further shows that there is heterogeneity of treatment effects across gender, as illustrated by Figure 9. Panel (a) shows that access to Medicare's home health care reduces the likelihood of co-residence by 9.7 percentage points for unhealthy single black females in the second income quartile. Panel (b) shows that there is an imprecisely estimated 4-percentage point decrease in co-residence for their male counterpart.

Table 6 reports estimates of the effect of access to Medicare's home health care on the likelihood of co-residence for relatively healthy single individuals. Column (1) of Panel A shows that there is a small positive and imprecisely estimated overall effect for relatively healthy singles. For relatively healthy singles in the second income quartile, there is a small and significant increase in the likelihood of co-residence at age 65. However, since it is unlikely that relatively healthy individuals need or are eligible for Medicare's home health

care benefits, the increase in the likelihood of co-residence is unlikely due to Medicare's home health care. Columns (2)-(4) show that the effects of Medicare's home health care on co-residence are small and imprecisely estimated for different racial groups. These results are largely in line with the first-stage results on home health care use.

V.B. Changes in Medicaid Coverage at Age 65

There may be a concern that Medicaid coverage may increase as a result of the increase in Medicare coverage. This may then bias my estimates upward in magnitude. To address this concern, I examine whether there are any changes in Medicaid coverage at age 65. Table 7 reports estimates of changes in Medicaid coverage at age 65 for singles by income and health group. Columns (2) and (3) of Penal A show that for relatively healthy singles, there is an increase in Medicaid coverage, whereas for less healthy singles, there is a decrease in Medicaid coverage. Figure 10 shows the corresponding graphical illustration. Column (2) of Panels B-E shows that there is a small and imprecisely estimated reduction in Medicaid coverage for relatively healthy individuals in the bottom income quartile. For relatively healthy singles in the top three income quartiles, Medicaid coverage either decreases or increases. However, these changes are unimportant to my identification strategy because it is very uncommon that these people are in need of home health care and thus are affected by Medicare's or Medicaid's home health care benefits. Column (3) of Panels B-E shows that there is a small and imprecisely estimated reduction in Medicaid coverage for unhealthy individuals in the bottom and third income quartiles. For unhealthy singles in the second and top income quartiles, Medicaid coverage *decreases* instead of increases, which may bias my estimates in a favorable direction, namely the estimates may be *biased downward* instead of upward in magnitude.

V.C. Changes in Other Factors at Age 65

Next, I examine whether changes in other factors at the threshold could potentially compromise the validity of the RDD. In addition to Medicaid coverage, one concern is that retirement may change at age 65, since it is the full retirement age, which could in turn affect individuals' living arrangements. However, using NHIS data, Card et al. (2009) show that there is no significant discontinuity in the share of people employed at age 65. One reason retirement remains relatively smooth across the threshold may be that individuals can start receiving Social Security benefits as early as age 62 and that the mandatory retirement age has been abolished. Another factor I examine is the share of individuals reporting difficulty living independently due to physical, mental, or emotional problems, which could directly affect living arrangements. The results are shown in Figure 11. As the figure illustrates, there is no significant discontinuity in the share of individuals reporting difficulty living independently at age 65. However, Figure 11 also reveals a change in the slope of the trend at age 65. Specifically, the trend remains relatively flat between ages 55 and 65, while between ages 65 and 75, the share of individuals reporting difficulty living independently increases at an accelerating rate. Since our main estimates only focus on local changes at the threshold, the potential confounding effect of this trend is negligible.

V.D. Robustness Check

In the robustness check, I define a co-resident household as one in which, besides the individual aged 55 to 75 and their spouse or partner, there is at least one other individual over the age of 18 living in the household. Table 8 presents estimates of the effect of access to Medicare's home health care on the likelihood of co-residence among less healthy single individuals. Column (3) shows that the marginally significant effect for less healthy, single Black individuals in the main analysis becomes insignificant. However, the effect for less healthy, single Black individuals in the second income quartile remains highly significant and largely unchanged in magnitude. Table 9 reports estimates of the effect of access to

Medicare's home health care on the likelihood of co-residence for relatively healthy single individuals. Column (1) shows that the significant increase in the likelihood of co-residence for relatively healthy singles in the bottom income quartile in the main analysis becomes only marginally significant.

Tables 10 and 11 report estimates of the effect of changes in Medicare eligibility on home health care use for single and married individuals, respectively, from models in which the bandwidths chosen (hereinafter referred to as CCT bandwidths) are based on the optimal bandwidth choice methodology proposed by Calonico et al. (2014). The results from the main specification are not robust to this alternative specification, as the significant effects identified in the main analysis lose precision. Tables 12 and 13 present estimates of the effect of access to Medicare's home health care on the likelihood of co-residence among less healthy and relatively healthy single individuals, respectively, using models with CCT bandwidths. In general, the results are robust to a linear specification with CCT bandwidths but not to a quadratic specification. This sensitivity may be due to the discrete nature of the running variable, which results in a small number of support points.

V.E. Co-residence in 1980

Before the 1980 Omnibus Budget Reconciliation Act (OBRA) went into effect on July 1, 1981—which eliminated the Part A annual visit cap, prior hospitalization requirements, and the Part B deductible—Medicare's home health benefits were less generous than they are today. In 1980, only 2.7% of the elderly population received home health services through Medicare, with each beneficiary receiving an average of 22 annual visits. By 2008, these numbers had increased to 8.6% and 35 visits, respectively (Montauk, 1998; The National Association for Home Care and Hospice, 2010). I exploit the difference in home health care utilization between 1980 and today to conduct a falsification test using the 1980 Census. If the decrease in the likelihood of co-residence at age 65 today is driven by Medicare's home health benefits, then we would expect to observe a smaller change in co-residence in

1980, given the less generous benefits at that time. However, the generally weaker social safety net in 1980 may have resulted in a higher elasticity of co-residence with respect to Medicare's home health care benefits compared to today, which could limit the comparability of the estimates. Therefore, the 1980 estimate should be interpreted as an upper bound of the counterfactual effect of more limited Medicare home health care benefits on living arrangements in today's society. Figure 12 illustrates that in 1980, there was an imprecisely estimated 3.3 percentage-point decrease in co-residence at age 65 among less healthy, single Black individuals in the second income quartile, which is less than half the size of the decrease in co-residence observed today.

VI. Conclusion

Older people's living arrangements are closely tied to caregiving and are among the most important factors influencing their quality of life. In addition, different types of living arrangements can impose varying costs on different parties. Therefore, understanding how public programs that support elderly care affect these living arrangements can help policymakers develop health policies that improve the well-being of both older people and their caregivers while maintaining the financial sustainability of the healthcare system. This paper exploits the increase in Medicare coverage at age 65 to examine the effect of access to Medicare's home health care benefits on the likelihood of co-residence. My results suggest that the increase in Medicare coverage at age 65 induces an 11-percentage-point increase in home health care use among less healthy single elderly individuals, driven by those in the second income quartile. I also find that the effect of increased home health care use on the likelihood of co-residence is very small and statistically indistinguishable from zero for less healthy single elderly individuals. However, my results indicate heterogeneity in treatment effects across racial groups and gender. For less healthy, single Black elderly individuals, Medicare's home health care benefits reduce the likelihood of co-residence by 3 percentage

points. This effect is concentrated among less healthy, single Black individuals—particularly females—in the second income quartile. For other racial groups, the effects are small and statistically indistinguishable from zero. For married individuals, I find that neither home health care use nor the likelihood of co-residence changes at the age threshold. Overall, my findings suggest that access to Medicare's home health care benefits may significantly influence care utilization patterns and living arrangements for certain vulnerable elderly subpopulations.

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Tables and Figures

Table 1: Summary Statistics for MEPS, ACS, and 1980 Census Samples

	MEPS		ACS		1980 Census	
	Single	Married	Single	Married	Single	Married
	(1)	(2)	(3)	(4)	(5)	(6)
Male	0.38	-	0.36	-	0.24	-
White	0.69	0.78	0.68	0.77	0.81	0.09
Black	0.16	0.07	0.17	0.07	0.14	0.07
Less Than High School	0.17	0.12	0.17	0.12	0.56	0.47
High School Graduate	0.32	0.31	0.30	0.28	0.26	0.29
Less Healthy	0.16	0.10	0.16	0.08	0.10	0.06
Insured	0.91	0.95	0.91	0.95	-	-
Medicaid	0.18	0.05	0.21	0.08	-	-
Home Health Care	0.06	0.03	-	-	-	-
Co-residence	-	-	0.30	0.32	0.25	0.32
Income*	35,151	79,823	33,642	88,829	24,079	61,446
Observations	21,674	33,879	2,535,202	3,441,302	502,293	711,111

Note: The table shows the means of a sample of single and married individuals aged 55–75 from the pooled 2001–2019 MEPS data in columns (1) and (2), the pooled 2008–2019 ACS data in columns (3) and (4), and the 1980 Census data in columns (5) and (6). *Dollar figures are converted to 2009 dollars using the CPI. Income is defined as personal income for single individuals and family income for married individuals.

Table 2: Probit and OLS Estimates: Differences in Home Health Care Utilization Between Relatively Healthy and Less Healthy Individuals

	Marital Status	
	Single	Married
	(1)	(2)
A. Probability of Using Home Health Care		
Less Healthy	0.14***	0.06***
	(0.01)	(0.00)
B. Number of Home Health Care Events Conditional on Having at Least One Event		
Less Healthy	1.16***	0.59***
	(0.08)	(0.04)

Note: Column (1) presents the differences in home health care utilization between relatively healthy and less healthy single individuals at both the extensive and intensive margins. Column (2) presents the differences in home health care utilization between relatively healthy and less healthy married individuals at both the extensive and intensive margins. Each regression is weighted by person weights. Standard errors are shown in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 3: Changes in Home Health Care Use at Age 65 Among Single Individuals, by Income and Health Status

	Health Status		
	All	Relatively Healthy	Less Healthy
	(1)	(2)	(3)
A. All			
Post65	0.014	−0.002	0.110**
	(0.012)	(0.011)	(0.049)
B. Bottom Income Quartile			
Post65	0.027	−0.002	0.110
	(0.034)	(0.026)	(0.085)
C. Second Income Quartile			
Post65	0.037	−0.021	0.226***
	(0.031)	(0.031)	(0.079)
D. Third Income Quartile			
Post65	−0.003	−0.006	0.022
	(0.023)	(0.020)	(0.101)
E. Top Income Quartile			
Post65	−0.002	0.003	0.023
	(0.017)	(0.015)	(0.117)

Note: Column (1) presents changes in home health care use at age 65 among single individuals across different income quartiles. Column (2) presents changes in home health care use at age 65 among relatively healthy singles across different income quartiles. Column (3) presents changes in home health care use at age 65 among less healthy singles across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are shown in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 4: Changes in Home Health Care Use at Age 65 for Married Individuals, by Income and Health Status

	Health Status		
	All	Relatively Healthy	Less Healthy
	(1)	(2)	(3)
A. All			
Post65	0.001	0.002	−0.013
	(0.006)	(0.004)	(0.040)
B. Bottom Income Quartile			
Post65	−0.006	0.001	−0.057
	(0.015)	(0.010)	(0.071)
C. Second Income Quartile			
Post65	0.006	0.002	0.036
	(0.009)	(0.007)	(0.058)
D. Third Income Quartile			
Post65	0.002	0.004	−0.009
	(0.011)	(0.009)	(0.088)
E. Top Income Quartile			
Post65	0.000	0.000	−0.022
	(0.011)	(0.008)	(0.120)

Note: Column (1) presents changes in home health care use at age 65 among married individuals across different income quartiles. Column (2) presents changes in home health care use at age 65 among relatively healthy married individuals across different income quartiles. Column (3) presents changes in home health care use at age 65 among less healthy married individuals across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 5: Changes in Co-residence at Age 65 for Less Healthy Singles, by Income and Racial Groups

	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All				
Post65	−0.003	0.007	−0.030*	−0.007
	(0.007)	(0.009)	(0.016)	(0.018)
B. Bottom Income Quartile				
Post65	0.004	0.012	0.011	−0.033
	(0.010)	(0.014)	(0.021)	(0.022)
C. Second Income Quartile				
Post65	−0.015	−0.006	−0.081***	0.043
	(0.013)	(0.015)	(0.031)	(0.038)
D. Third Income Quartile				
Post65	−0.007	0.007	−0.080*	0.033
	(0.018)	(0.021)	(0.046)	(0.054)
E. Top Income Quartile				
Post65	0.013	0.015	−0.028	0.041
	(0.024)	(0.027)	(0.063)	(0.070)

Note: Column (1) presents changes in the likelihood of co-residence at age 65 among less healthy single individuals across different income quartiles. Columns (2)–(4) present changes in the likelihood of co-residence at age 65 among less healthy non-Hispanic White single individuals, non-Hispanic Black single individuals, and single individuals of other races, respectively, across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 6: Changes in Co-residence at Age 65 Among Relatively Healthy Single Individuals, by Income and Racial Groups

	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All				
Post65	0.001	−0.002	0.005	0.011
	(0.003)	(0.003)	(0.007)	(0.008)
B. Bottom Income Quartile				
Post65	0.015**	0.008	0.021	0.020
	(0.006)	(0.009)	(0.013)	(0.013)
C. Second Income Quartile				
Post65	−0.003	−0.005	−0.005	0.010
	(0.006)	(0.007)	(0.015)	(0.017)
D. Third Income Quartile				
Post65	−0.007	−0.005	−0.014	−0.007
	(0.005)	(0.006)	(0.014)	(0.017)
E. Top Income Quartile				
Post65	−0.001	−0.004	0.013	0.000
	(0.004)	(0.005)	(0.015)	(0.017)

Note: Column (1) presents changes in the likelihood of co-residence at age 65 among relatively healthy single individuals across different income quartiles. Columns (2)–(4) present changes in the likelihood of co-residence at age 65 among relatively healthy non-Hispanic White single individuals, non-Hispanic Black single individuals, and single individuals of other races, respectively, across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 7: Changes in Medicaid Coverage at Age 65 Among Single Individuals, by Income and Health Status

	Health Status		
	All	Relatively Healthy	Less Healthy
	(1)	(2)	(3)
A. All			
Post65	−0.001	0.004**	−0.020***
	(0.002)	(0.002)	(0.007)
B. Bottom Income Quartile			
Post65	−0.006	0.001	−0.007
	(0.005)	(0.006)	(0.010)
C. Second Income Quartile			
Post65	−0.018***	−0.015***	−0.029**
	(0.005)	(0.005)	(0.013)
D. Third Income Quartile			
Post65	0.008***	0.012***	−0.025
	(0.003)	(0.003)	(0.016)
E. Top Income Quartile			
Post65	0.016	0.020***	−0.056***
	(0.002)	(0.002)	(0.020)

Note: Column (1) presents changes in Medicaid coverage at age 65 among single individuals across different income quartiles. Column (2) presents changes in Medicaid coverage at age 65 among relatively healthy single individuals across different income quartiles. Column (3) presents changes in Medicaid coverage at age 65 among less healthy single individuals across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 8: Robustness Check: Changes in Co-residence at Age 65 Among Less Healthy Single Individuals, by Income and Racial Groups

	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All				
Post65	−0.002	0.006	−0.026	−0.002
	(0.007)	(0.009)	(0.016)	(0.018)
B. Bottom Income Quartile				
Post65	0.005	0.007	0.007	−0.008
	(0.010)	(0.014)	(0.021)	(0.022)
C. Second Income Quartile				
Post65	−0.017	−0.004	−0.083***	0.023
	(0.013)	(0.016)	(0.031)	(0.038)
D. Third Income Quartile				
Post65	−0.005	0.005	−0.033	−0.012
	(0.019)	(0.022)	(0.046)	(0.055)
E. Top Income Quartile				
Post65	0.023	0.029	0.000	0.007
	(0.025)	(0.028)	(0.064)	(0.073)

Note: Column (1) presents changes in the likelihood of co-residence at age 65 among less healthy single individuals across different income quartiles. Columns (2)–(4) present changes in the likelihood of co-residence at age 65 among less healthy non-Hispanic White single individuals, non-Hispanic Black single individuals, and single individuals of other races, respectively, across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 9: Robustness Check: Changes in Co-residence at Age 65 Among Relatively Healthy Single Individuals, by Income and Racial Groups

	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All				
Post65	0.003	0.000	0.004	0.010
	(0.003)	(0.003)	(0.008)	(0.008)
B. Bottom Income Quartile				
Post65	0.011*	−0.002	0.021	0.013
	(0.006)	(0.006)	(0.014)	(0.011)
C. Second Income Quartile				
Post65	−0.003	−0.007	−0.009	0.019
	(0.006)	(0.007)	(0.015)	(0.016)
D. Third Income Quartile				
Post65	−0.004	0.005	−0.013	0.000
	(0.005)	(0.009)	(0.015)	(0.017)
E. Top Income Quartile				
Post65	0.003	0.000	0.013	−0.009
	(0.005)	(0.003)	(0.016)	(0.018)

Note: Column (1) presents changes in the likelihood of co-residence at age 65 among relatively healthy single individuals across different income quartiles. Columns (2)–(4) present changes in the likelihood of co-residence at age 65 among relatively healthy non-Hispanic White single individuals, non-Hispanic Black single individuals, and single individuals of other races, respectively, across different income quartiles. Entries are estimated regression discontinuities at age 65 from models that include quadratic controls for age, fully interacted with a dummy for being age 65 or older. Additional controls include individual-level characteristics. Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 10: Robustness Check: Changes in Home Health Care Use at Age 65 Among Single Individuals, by Income and Health Status

	Health Status		
	All	Relatively Healthy	Less Healthy
	(1)	(2)	(3)
A. All			
Post65 (Linear + CCT Bandwidth)	−0.001	−0.013	0.088
	(0.019)	(0.018)	(0.069)
Post65 (Quadratic + CCT Bandwidth)	−0.003	−0.016	0.074
	(0.028)	(0.025)	(0.108)
B. Bottom Income Quartile			
Post65 (Linear + CCT Bandwidth)	0.027	0.011	0.093
	(0.048)	(0.033)	(0.133)
Post65 (Quadratic + CCT Bandwidth)	0.022	0.009	0.033
	(0.080)	(0.082)	(0.208)
C. Second Income Quartile			
Post65 (Linear + CCT Bandwidth)	0.030	0.002	0.116
	(0.042)	(0.043)	(0.110)
Post65 (Quadratic + CCT Bandwidth)	0.041	0.079	0.141
	(0.101)	(0.087)	(0.147)
D. Third Income Quartile			
Post65 (Linear + CCT Bandwidth)	−0.032	−0.050	−0.008
	(0.036)	(0.039)	(0.147)
Post65 (Quadratic + CCT Bandwidth)	−0.042	−0.062	0.051
	(0.052)	(0.048)	(0.228)
E. Top Income Quartile			
Post65 (Linear + CCT Bandwidth)	−0.015	−0.022	0.105
	(0.024)	(0.026)	(0.192)
Post65 (Quadratic + CCT Bandwidth)	−0.014	−0.022	0.187
	(0.044)	(0.047)	(0.460)

Note: The entries in the first row of each panel are estimated regression discontinuities at age 65 from models that include a linear control for age. The entries in the second row of each panel are estimated regression discontinuities at age 65 from models that include quadratic controls for age. Optimal bandwidths are selected based on the methodology proposed by Calonico et al. (2014). Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 11: Robustness Check: Changes in Home Health Care Use at Age 65 Among Married Individuals, by Income and Health Status

	Health Status		
	All	Top	Bottom
	(1)	(2)	(3)
A. All			
Post65 (Linear + CCT Bandwidth)	−0.004	−0.002	−0.037
	(0.008)	(0.006)	(0.061)
Post65 (Quadratic + CCT Bandwidth)	−0.008	−0.004	−0.104
	(0.013)	(0.010)	(0.096)
B. Bottom Income Quartile			
Post65 (Linear + CCT Bandwidth)	0.024	0.019	−0.005
	(0.022)	(0.012)	(0.104)
Post65 (Quadratic + CCT Bandwidth)	0.059	0.047	0.016
	(0.051)	(0.032)	(0.182)
C. Second Income Quartile			
Post65 (Linear + CCT Bandwidth)	−0.003	−0.005	−0.007
	(0.011)	(0.009)	(0.067)
Post65 (Quadratic + CCT Bandwidth)	−0.008	0.000	−0.079
	(0.019)	(0.017)	(0.103)
D. Third Income Quartile			
Post65 (Linear + CCT Bandwidth)	−0.008	−0.004	−0.055
	(0.016)	(0.014)	(0.121)
Post65 (Quadratic + CCT Bandwidth)	−0.024	−0.017	−0.126
	(0.024)	(0.021)	(0.178)
E. Top Income Quartile			
Post65 (Linear + CCT Bandwidth)	−0.013	−0.009	−0.082
	(0.017)	(0.011)	(0.220)
Post65 (Quadratic + CCT Bandwidth)	−0.018	−0.010	−0.169
	(0.025)	(0.019)	(0.345)

Note: The entries in the first row of each panel represent estimated regression discontinuities at age 65 from models with a linear control for age. The entries in the second row represent estimated regression discontinuities at age 65 from models with quadratic controls for age. Optimal bandwidths are selected following the methodology proposed by Calonico et al. (2014). Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 12: Robustness Check: Changes in Co-residence at Age 65 Among Less Healthy Single Individuals, by Income and Racial Groups

	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All Income				
Post65 (Linear + CCT Bandwidth)	0.002	0.021	−0.039*	−0.012
	(0.009)	(0.014)	(0.021)	(0.029)
Post65 (Quadratic + CCT Bandwidth)	−0.005	0.028	−0.064	−0.038
	(0.021)	(0.026)	(0.046)	(0.053)
B. Bottom Income Quartile				
Post65 (Linear + CCT Bandwidth)	−0.008	0.010	0.000	−0.051
	(0.017)	(0.018)	(0.027)	(0.036)
Post65 (Quadratic + CCT Bandwidth)	−0.027	0.002	−0.026	−0.096
	(0.031)	(0.041)	(0.062)	(0.067)
C. Second Income Quartile				
Post65 (Linear + CCT Bandwidth)	0.010	0.029	−0.079**	0.055
	(0.021)	(0.024)	(0.037)	(0.047)
Post65 (Quadratic + CCT Bandwidth)	0.018	0.043	−0.099	0.070
	(0.037)	(0.044)	(0.089)	(0.111)
D. Third Income Quartile				
Post65 (Linear + CCT Bandwidth)	0.008	0.026	−0.114*	0.092
	(0.022)	(0.028)	(0.061)	(0.070)
Post65 (Quadratic + CCT Bandwidth)	0.051	0.073	−0.128	0.175
	(0.052)	(0.061)	(0.132)	(0.160)
E. Top Income Quartile				
Post65 (Linear + CCT Bandwidth)	0.023	0.039	−0.039	0.018
	(0.029)	(0.034)	(0.081)	(0.087)
Post65 (Quadratic + CCT Bandwidth)	−0.012	0.037	−0.133	−0.109
	(0.067)	(0.076)	(0.191)	(0.199)

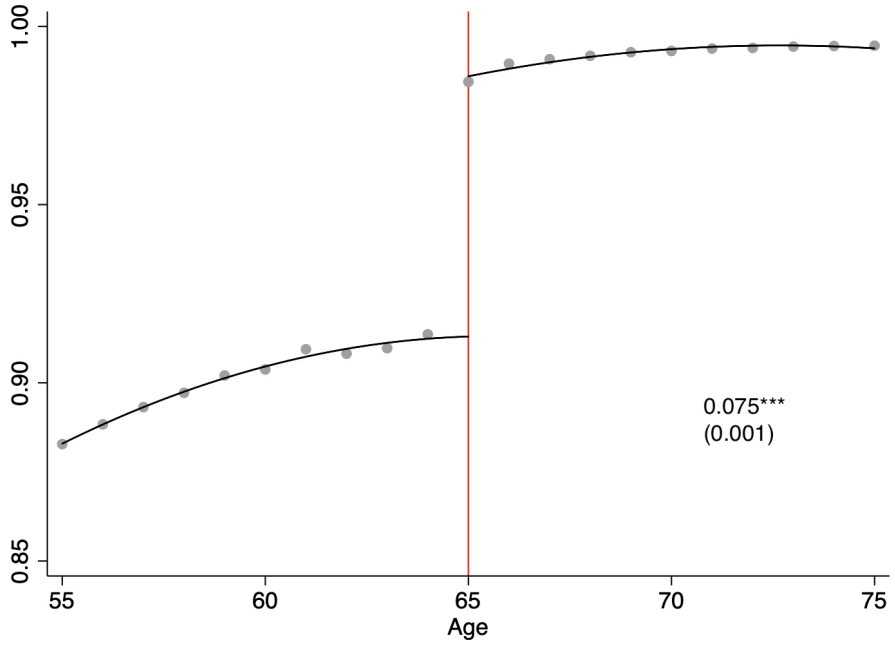
Note: The entries in the first row of each panel represent estimated regression discontinuities at age 65 from models with a linear control for age. The entries in the second row represent estimated regression discontinuities at age 65 from models with quadratic controls for age. Optimal bandwidths are selected following the methodology proposed by Calonico et al. (2014). Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Table 13: Robustness Check: Changes in Co-residence at Age 65 Among Relatively Healthy Single Individuals, by Income and Racial Groups

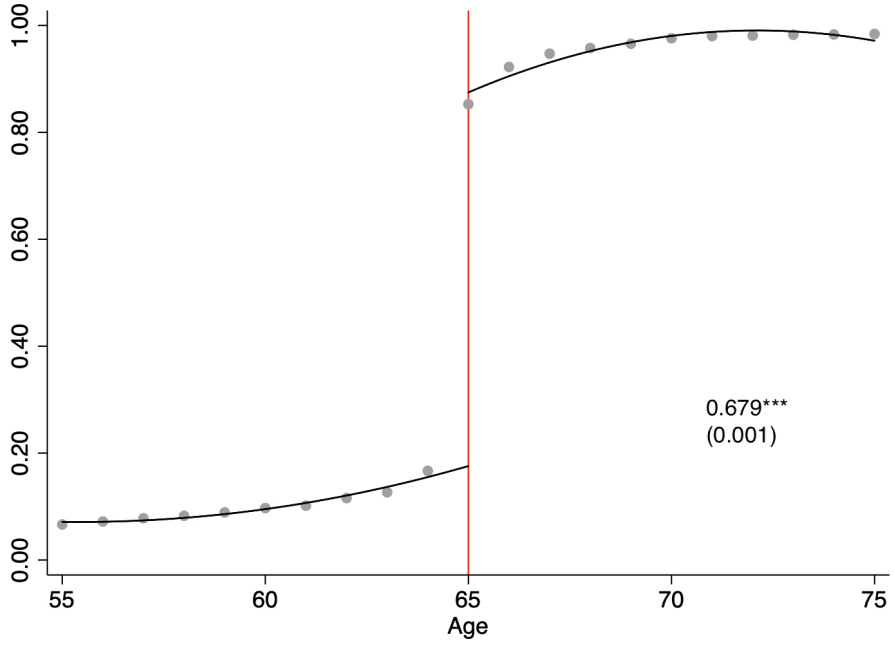
	Racial Groups			
	All	White	Black	Other
	(1)	(2)	(3)	(4)
A. All Income Groups				
Post65 (Linear + CCT Bandwidth)	0.007	−0.002	0.024**	0.020*
	(0.004)	(0.004)	(0.012)	(0.010)
Post65 (Quadratic + CCT Bandwidth)	0.009	−0.002	0.040*	0.016
	(0.008)	(0.009)	(0.022)	(0.024)
B. Bottom Quartile of Income				
Post65 (Linear + CCT Bandwidth)	0.021**	0.002	0.035*	0.036**
	(0.008)	(0.011)	(0.019)	(0.016)
Post65 (Quadratic + CCT Bandwidth)	0.038*	0.014	0.060	0.046
	(0.019)	(0.026)	(0.041)	(0.038)
C. Second Quartile of Income				
Post65 (Linear + CCT Bandwidth)	−0.004	−0.005	0.001	0.008
	(0.007)	(0.008)	(0.019)	(0.021)
Post65 (Quadratic + CCT Bandwidth)	−0.012	−0.013	−0.003	0.012
	(0.018)	(0.021)	(0.044)	(0.050)
D. Third Quartile of Income				
Post65 (Linear + CCT Bandwidth)	0.003	−0.006	0.022	0.007
	(0.008)	(0.007)	(0.023)	(0.023)
Post65 (Quadratic + CCT Bandwidth)	0.011	0.001	0.062	−0.021
	(0.015)	(0.016)	(0.042)	(0.051)
E. Top Quartile of Income				
Post65 (Linear + CCT Bandwidth)	0.000	−0.004	0.033	−0.005
	(0.005)	(0.006)	(0.023)	(0.022)
Post65 (Quadratic + CCT Bandwidth)	0.003	−0.003	0.037	0.004
	(0.013)	(0.013)	(0.044)	(0.052)

Note: The entries in the first row of each panel represent estimated regression discontinuities at age 65 from models with a linear control for age. The entries in the second row represent estimated regression discontinuities at age 65 from models with quadratic controls for age. Optimal bandwidths are selected following the methodology proposed by Calonico et al. (2014). Each regression is weighted by person weights. Standard errors are reported in parentheses. * $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

Figure 1: Changes in Health Insurance and Medicare Coverage at Age 65 (ACS)



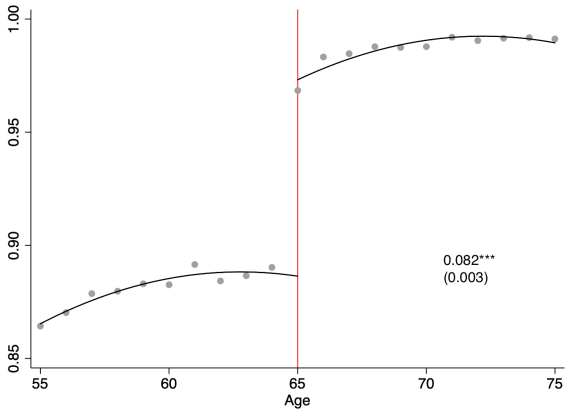
(a) Any Health Insurance



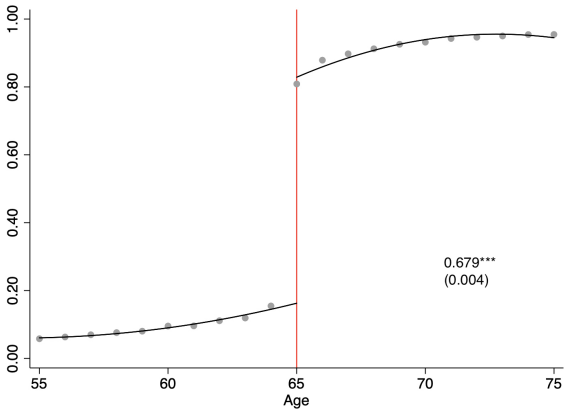
(b) Medicare

Note: Panels (a) and (b) present changes in health insurance and Medicare coverage at age 65 based on pooled 2008–2019 ACS data. The running variable, age, is measured in years. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied.

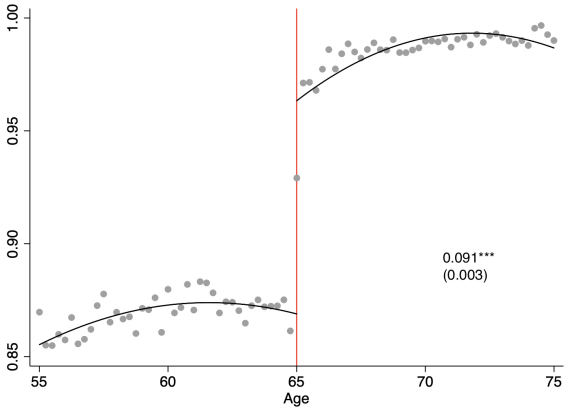
Figure 2: Changes in Health Insurance and Medicare Coverage at Age 65 (NHIS)



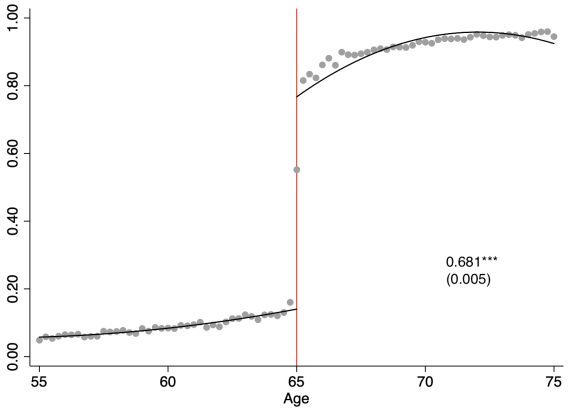
(a) Any Health Insurance (Age in Years)



(b) Medicare (Age in Years)



(c) Any Health Insurance (Age in Quarters)

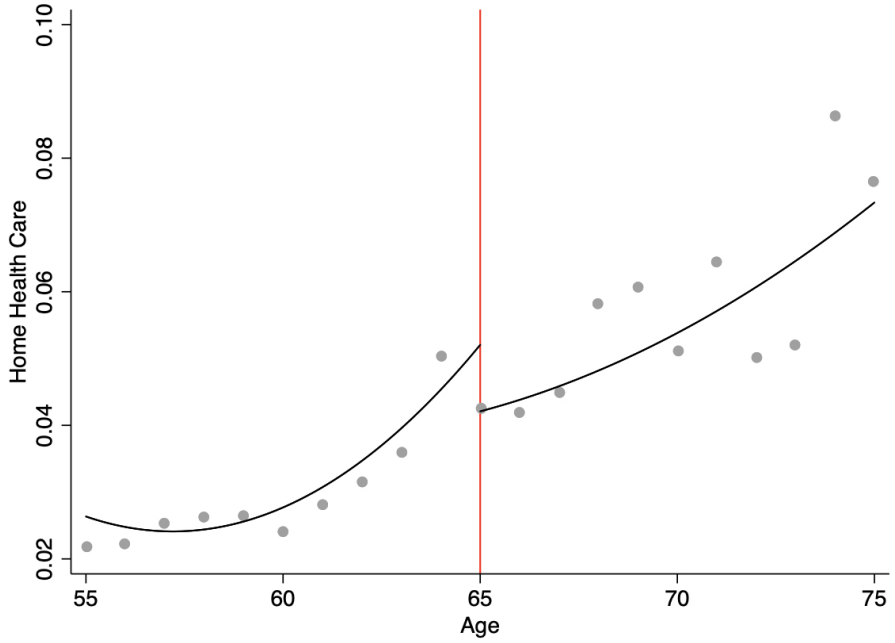


(d) Medicare (Age in Quarters)

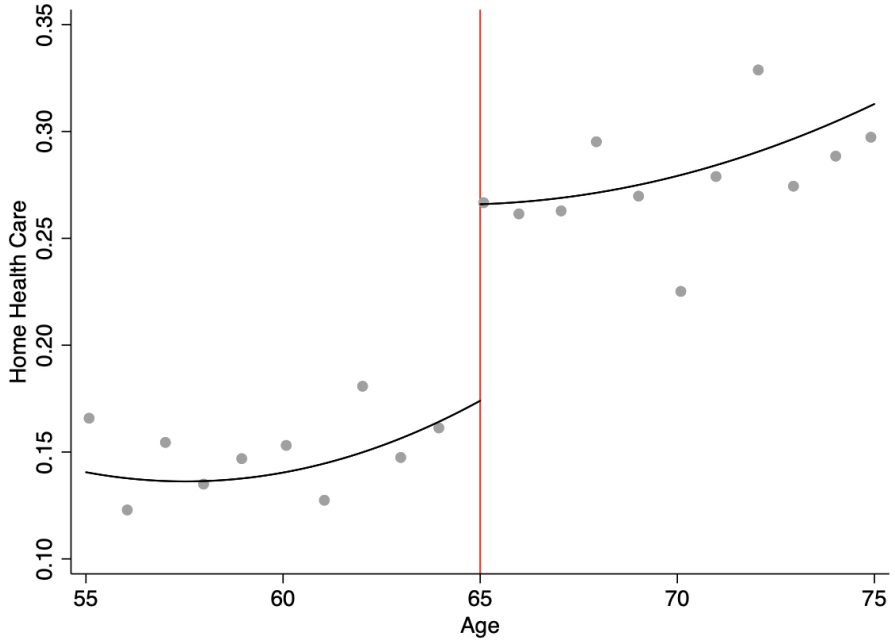
;

Note: Panels (a) and (b) present changes in health insurance and Medicare coverage at age 65 using pooled 2001–2019 NHIS data, with the running variable, age, measured in years. Panels (c) and (d) present changes in health insurance and Medicare coverage at age 65 using pooled 2001–2014 NHIS data, with the running variable, age, measured in quarters. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied.

Figure 3: Changes in Home Health Care Use at Age 65 Among Single Individuals, by Health Status



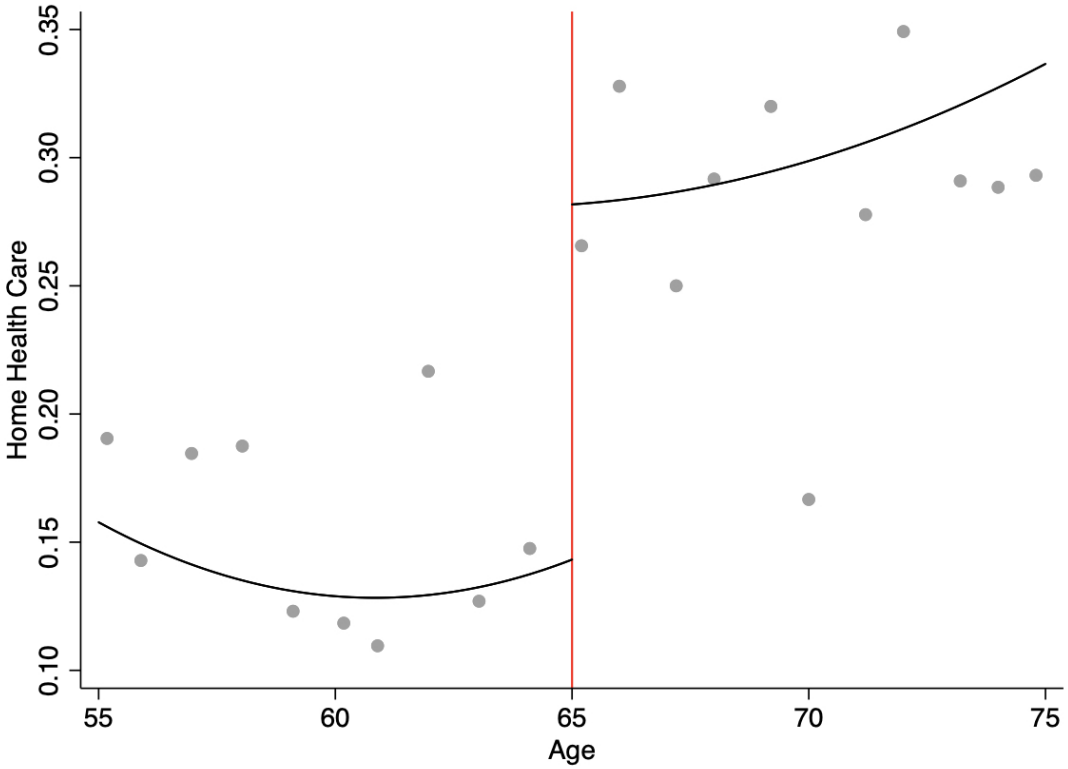
(a) Relatively Healthy



(b) Less Healthy

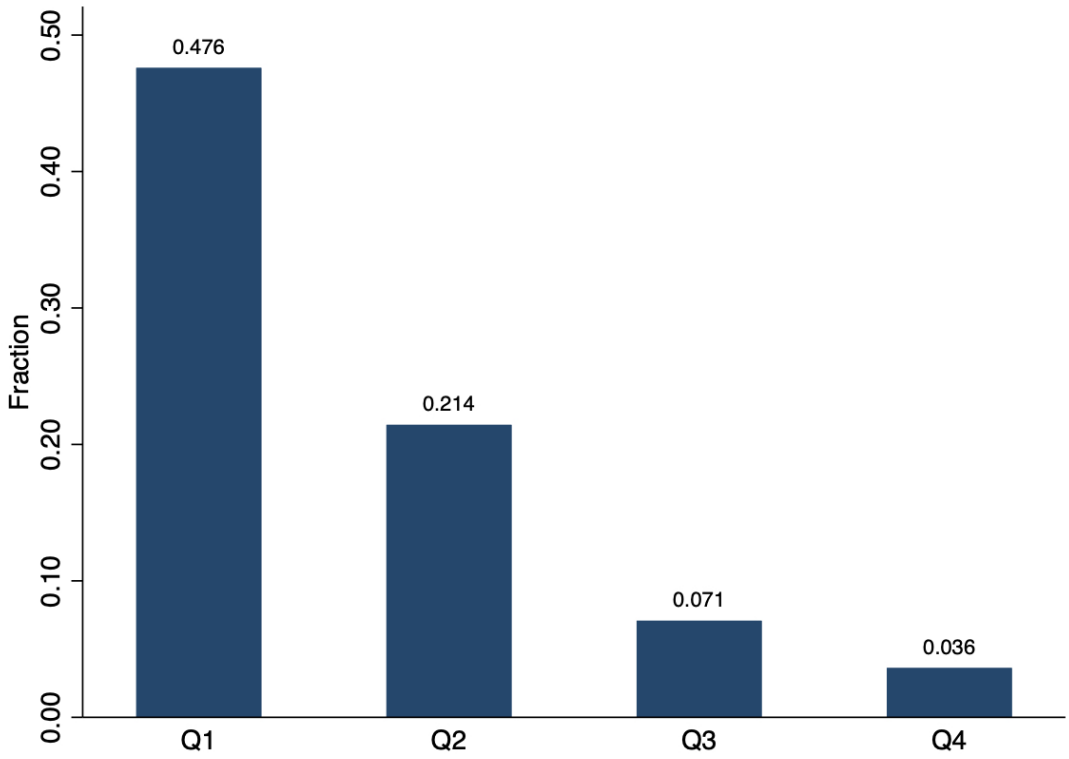
Note: Panels (a) and (b) present changes in home health care use at age 65 among relatively healthy and less healthy single individuals, respectively, based on 2001–2019 MEPS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 4: Changes in Home Health Care Use at Age 65 Among Less Healthy Single Individuals in the Second Income Quartile



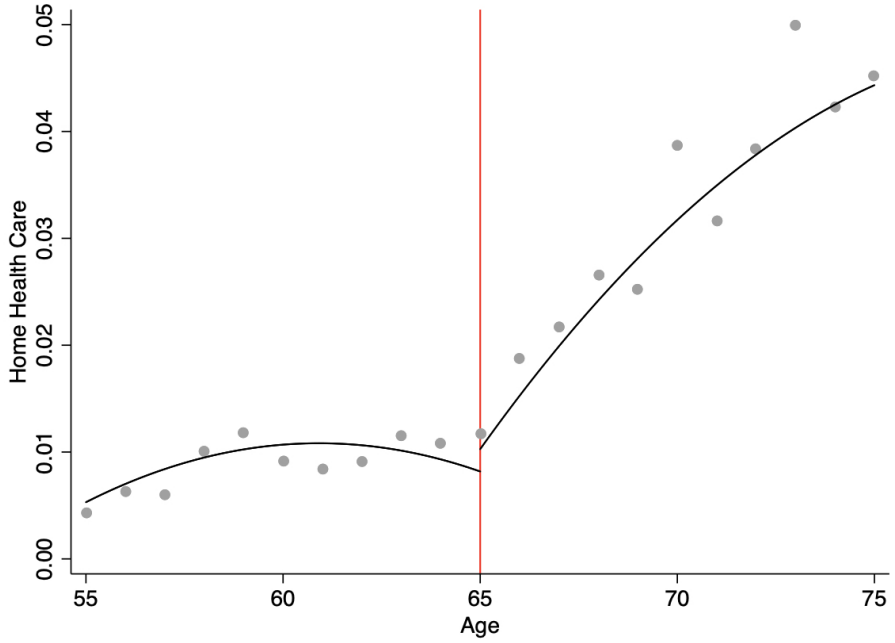
Note: The figure presents changes in home health care use at age 65 among less healthy single individuals in the second income quartile based on 2001–2019 MEPS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 5: Medicaid Coverage Among Single Individuals Across Income Quartiles

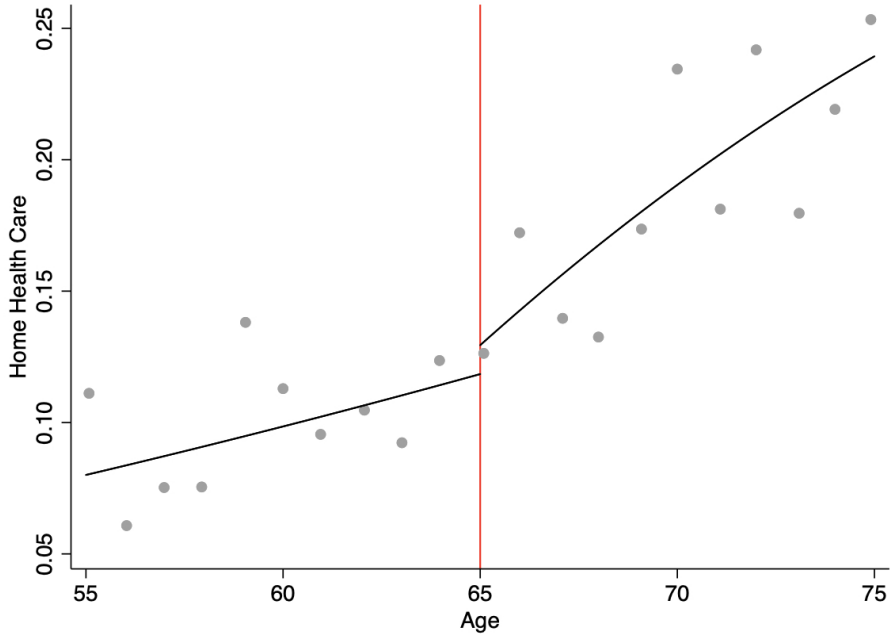


Note: The figure shows the proportion of individuals enrolled in Medicaid across different income quartiles. As illustrated, 47.6% of individuals in the bottom income quartile are enrolled in Medicaid. In comparison, 21.4% of individuals in the second income quartile are enrolled, which is less than half the proportion in the bottom quartile. Only 7.1% and 3.6% of individuals in the third and top income quartiles, respectively, are enrolled in Medicaid.

Figure 6: Changes in Home Health Care Use at Age 65 Among Married Individuals by Health Group



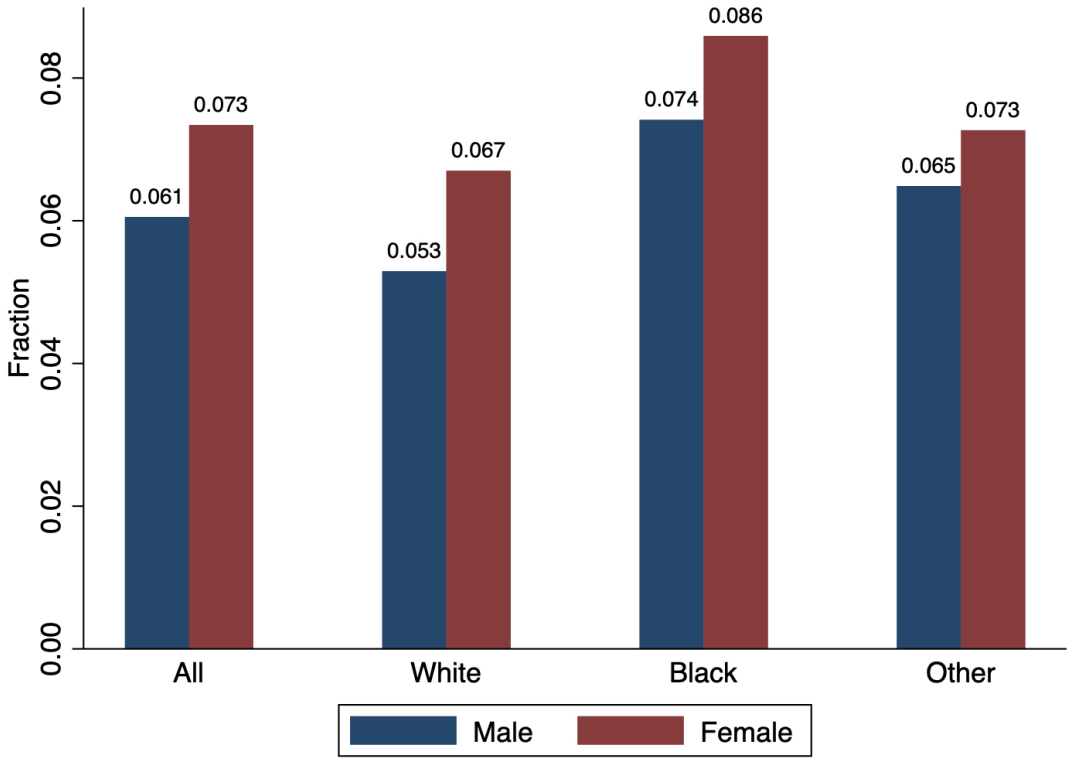
(a) Relatively Healthy



(b) Less Healthy

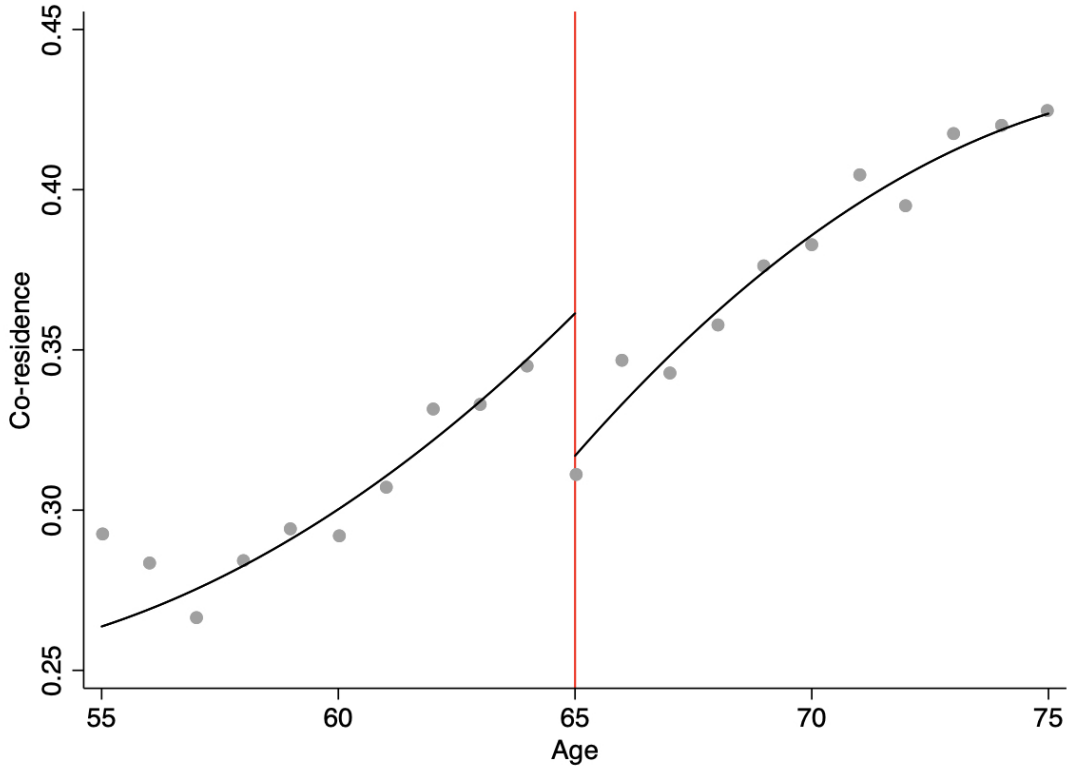
Note: Panels 6(a) and 6(b) present changes in home health care use at age 65 among relatively healthy and less healthy married individuals, respectively, based on 2001–2019 MEPS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 7: Home Health Care Utilization Among Single Individuals, by Race and Gender



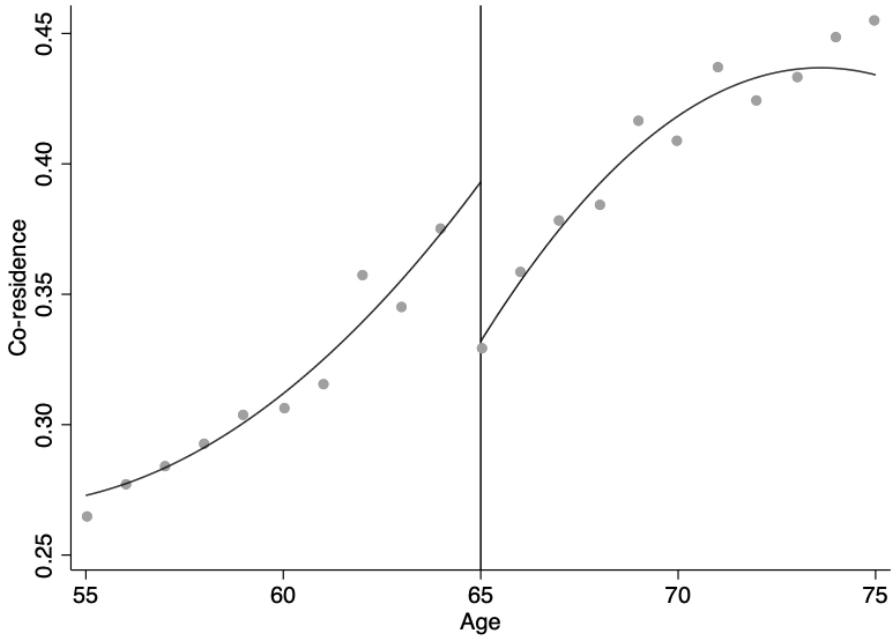
Note: The figure shows home health care utilization among single individuals. As illustrated, there is gender and racial heterogeneity in home health care utilization. Specifically, women exhibit approximately 20% higher home health care utilization than men. Additionally, non-Hispanic Black individuals have the highest home health care utilization, while non-Hispanic White individuals have the lowest.

Figure 8: Change in Co-residence at Age 65 Among Less Healthy Black Single Individuals in the Second Income Quartile

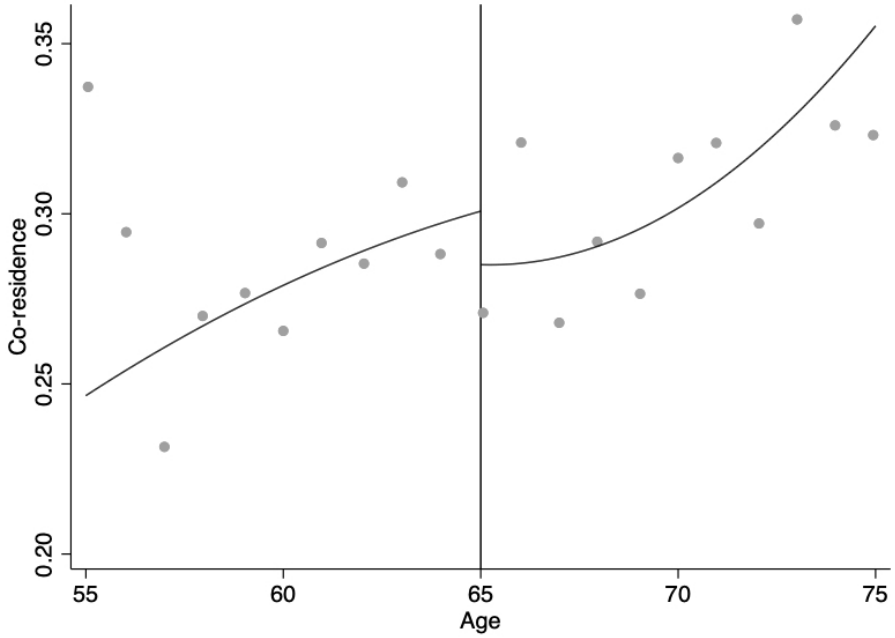


Note: The figure shows the change in the likelihood of co-residence at age 65 among less healthy Black single individuals in the second income quartile based on pooled 2008–2019 ACS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 9: Changes in Co-residence at Age 65 Among Less Healthy Black Single Individuals in the Second Income Quartile, by Gender



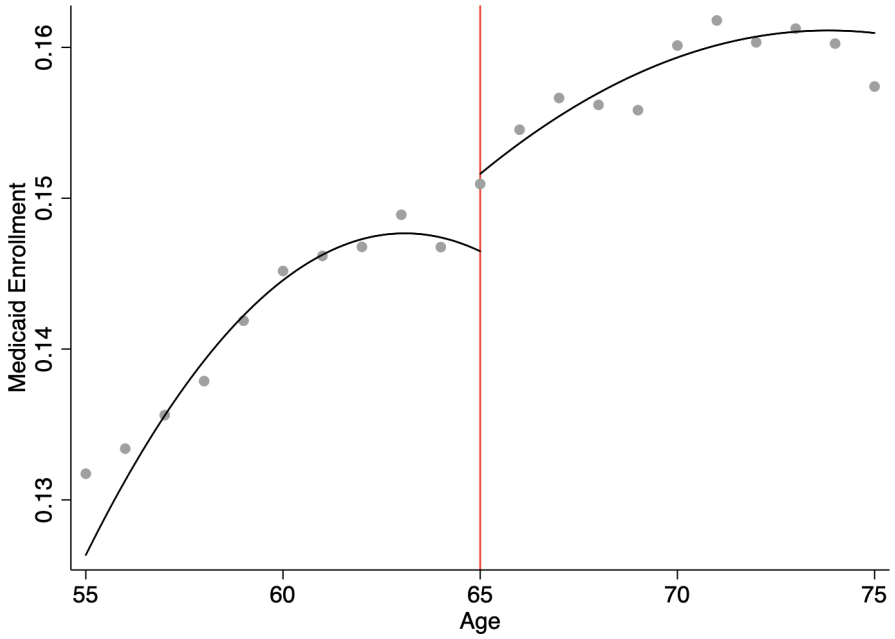
(a) Female



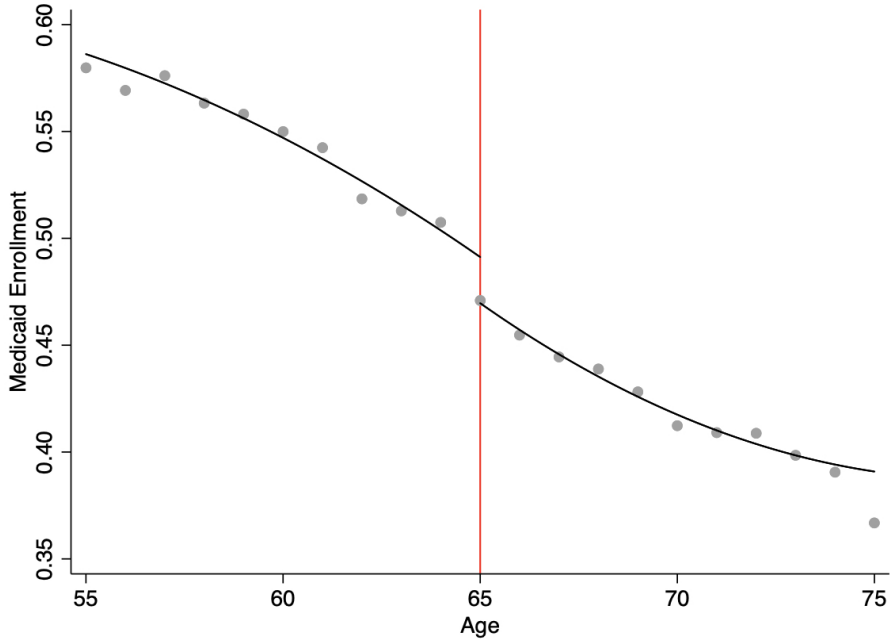
(b) Male

Note: Panels (a) and (b) present changes in the likelihood of co-residence at age 65 among less healthy Black single females and males, respectively, based on pooled 2008–2019 ACS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 10: Changes in Medicaid Coverage at Age 65 Among Single Individuals, by Health Status



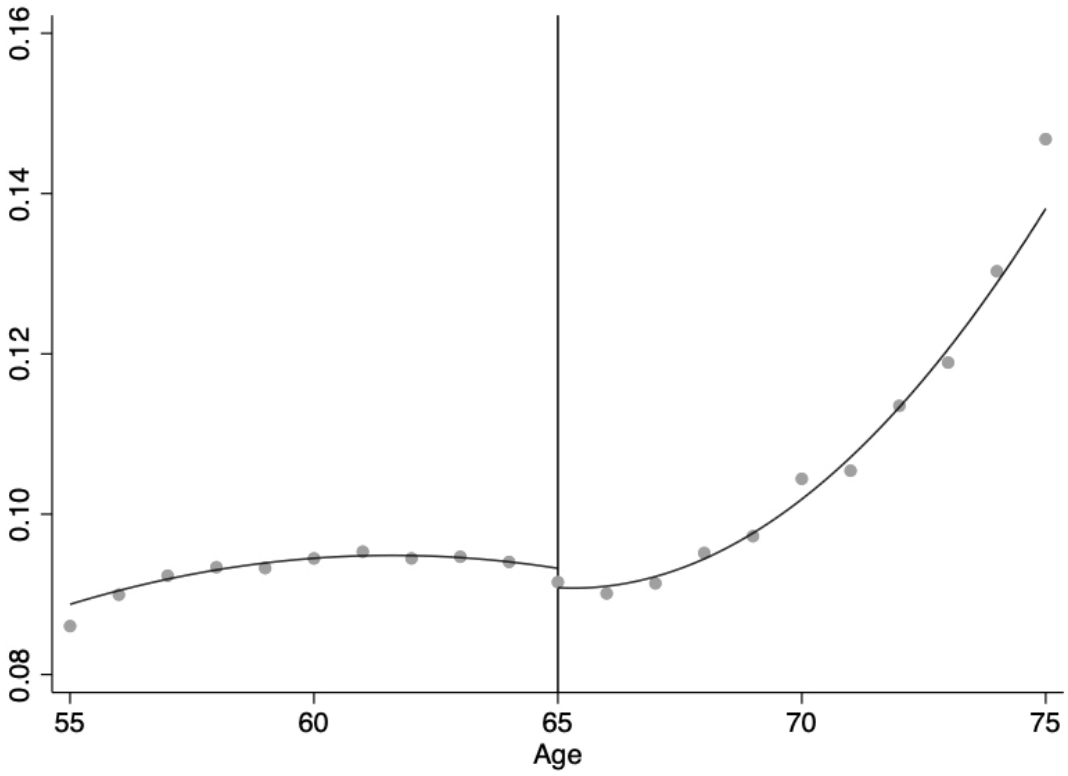
(a) Relatively Healthy



(b) Less Healthy

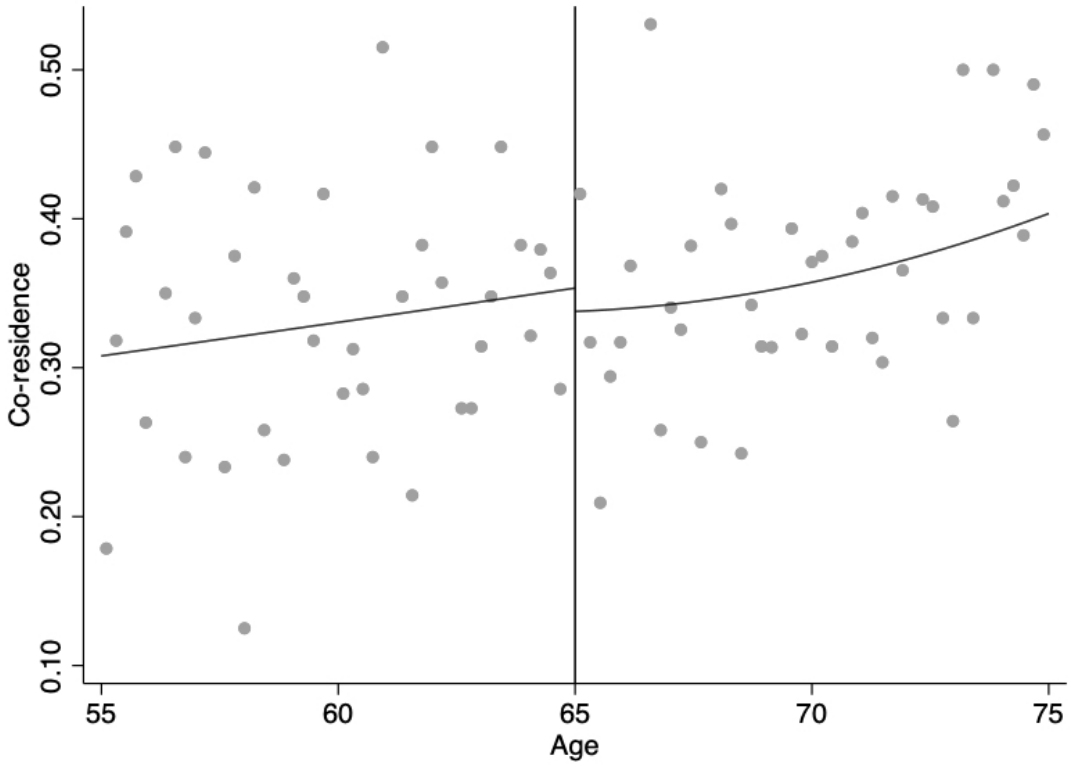
Note: Panels (a) and (b) present changes in the likelihood of Medicaid enrollment at age 65 for relatively healthy and less healthy individuals, respectively, based on pooled 2008–2019 ACS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 11: Change in the Share of Individuals with Difficulty Living Independently at Age 65



Note: The figure presents the change in the share of individuals with difficulty living independently at age 65, using pooled 2008–2019 ACS data. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in years.

Figure 12: Change in Co-residence at Age 65 Among Less Healthy Black Single Individuals in the Second Income Quartile (1980 Census)



Note: The figure shows the change in co-residence at age 65 among less healthy Black single individuals in the second income quartile. The polynomial fits shown are of order 2, not weighted by person weights, and a triangular kernel is applied. The running variable, age, is measured in quarters.