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Authors

Burgdorf, Julia
Ritchie, Christine
Reckrey, Jennifer
et al.

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Drivers of Community-Entry Home Health Care Utilization among Older Adults

Julia G. Burgdorf, PhD[a], **Christine S. Ritchie, MD, MSPH**[b], **Jennifer M. Reckrey, MD**[c], **Bian Liu, PhD**[c], **Catherine McDonough, MS**[c], **Katherine A. Ornstein, PhD, MPH**[d]

[a]Center for Home Care Policy & Research at VNS Health, New York, NY, USA

[b]Massachusetts General Hospital and Harvard Medical School, Boston, MA, USA

[c]Icahn School of Medicine at Mount Sinai, New York, NY, USA

[d]Johns Hopkins School of Nursing, Baltimore, MD, USA

Abstract

Objectives: A growing proportion of Medicare home health (HH) patients are "community-entry", meaning referred to HH without a preceding hospitalization. We sought to identify factors that predict community-entry HH use among older adults to provide foundational information regarding care needs and circumstances that may prompt community-entry HH referral.

Design: Nationally representative cohort study.

Setting and Participants: Health and Retirement Study (HRS) respondents who were 65+, community-living, and enrolled in Medicare between 2012–2018 (n=11,425 unique individuals providing 27,026 2-year observation periods).

Methods: HRS data was linked with standardized HH patient assessments. Community-entry HH utilization was defined as incurring one or more HH episode with no preceding hospitalization or institutional post-acute care stay (determined via assessment item indicating institutional care within 14 days of HH admission) within 2 years of HRS interview. Weighted, multivariable logistic regression was used to model community-entry HH use as a function of individual, social support, and community characteristics.

Results: The overall rate of community-entry HH utilization across observation periods was 13.4%. Older adults had higher odds of community-entry HH use if they were Medicaid enrolled (aOR=1.49 p=0.001), had fair/poor overall health (aOR=1.48; p<0.001), 3+ Activities of Daily Living limitations (aOR=1.47; p=0.007), and had fallen in the past two years (aOR=1.43; p<0.001). Compared to those receiving no caregiver help, individuals were more likely to use

Corresponding Author: Katherine Ornstein; ornstein@jhu.edu; (917) 518-2250; 525 North Wolfe Street, Suite N530, 5th Floor, Baltimore, MD 21205.

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community-entry HH if they received family/unpaid help only (aOR=1.81; p<0.001), both family and paid help (aOR=2.79; p<0.001), or paid help only (aOR: 3.46; p<0.001).

Conclusions and Implications: Findings indicate that community-entry HH serves a population with long-term care needs and co-existing clinical complexity, making this an important setting to provide skilled care and prevent avoidable health care utilization. Results highlight the need for ongoing monitoring of community-entry HH accessibility as this service is a key component of home-based care for a high-need sub-population.

Brief Summary:

Community-entry home health is a key care setting for community-living older adults with overlapping shorter-term clinical needs and ongoing social vulnerabilities.

Keywords

Medicare; Home Care; Home Health Care; Home Care Agencies; Community Health Care; Home health; Older adult; Family caregiver

INTRODUCTION:

As a large and growing number of older adults opt to age in place with functional impairment, rather than transitioning to institutional care, there is increasing demand for home-based clinical care.[1–3] The Medicare home health care (HH) benefit is the most frequently-used form of home-based clinical care among Medicare Fee-for-Service (FFS) enrollees.[4] HH delivers skilled services through visits to the patient's home, including nursing, physical and occupational therapy, social work, and aide care. Eligibility is determined by physician certification that an individual is homebound and has a temporary need for skilled nursing or therapy. Unlike other forms of home-based care, HH is largely affordable (FFS enrollees have no co-pay, although Medicare Advantage plans often require cost-sharing) and are more accessible.[5]

Patients can enter HH in two ways: (1) Referral from a community provider, such as a primary care physician or specialist—this is community-entry HH; or (2) Referral following a hospital or institutional post-acute care stay—this is post-acute HH. Historically, the majority of HH episodes have been post-acute and the preponderance of HH research has focused on post-acute utilization. However, the past two decades have seen marked growth in community-entry referrals[6] and nearly half (44%) of index HH episodes are now community-entry.[7]

Growth in community-entry HH utilization has prompted an ongoing policy discussion on whether Medicare should seek to limit this form of HH.[6,8,9] While community-entry HH may be an appropriate use of Medicare HH services to meet temporary skilled needs, pre-empt a medical crisis, and avoid more intensive forms of care like hospitalization, some have raised concerns that community-entry episodes could represent a potentially inappropriate use of Medicare funds to meet long-term care needs (long-term care is explicitly carved out of Medicare benefits). These concerns helped inform a 2020 revision to the Medicare HH payment system (PDGM: the Patient-Driven Groupings Model) which

reduced reimbursement for community-entry HH compared to post-acute HH.[10] This is the first time that HH payment has differed by referral source. (Note that PDGM also considers later episodes in a sustained sequence of HH use to be "community-entry" and reduces reimbursement for these episodes as well as index episodes with a community referral source.) In addition, MedPAC has recommended instituting a co-payment for community-entry episodes only.[11,12]

Unfortunately, there is little empirical evidence about community-entry HH use available to inform these discussions. Three prior studies, limited to FFS enrollees only, have compared the post-acute and community-entry HH patient populations and demonstrated meaningful differences between these groups, including that a greater proportion of community-entry patients are non-white, dually enrolled in Medicaid, have dementia, and receive multiple successive episodes of HH care.[7,9,13] However, no previous work has identified factors associated with greater likelihood of incurring community-entry HH. There is a need for foundational information in this area given that community-entry HH has been historically understudied, utilization of community-entry HH is growing, and MedPAC has raised concerns that the characteristics which prompt community-entry HH referral are poorly understood and unevenly applied by referring clinicians.[11,12] A prospective approach is needed to determine which characteristics predict community-entry HH use, to better understand who is accessing this service.

In the present study, we followed a large, nationally representative cohort of community-living older adults from 2012–2018 and observed whether they experienced any community-entry HH use. Our objective was to identify sociodemographic characteristics, health and functional status measures, and social and geographic contextual factors that predict community-entry HH use. Findings provide novel, foundational information regarding the care needs and circumstances that may prompt community-entry HH referral and offer critical context for ongoing policy discussions around reimbursement for this type of HH under PDGM and its place in the rapidly evolving landscape of home-based care for older adults.

STUDY DATA AND METHODS

Data Sources

Data were drawn from four linked sources: the Health and Retirement Study (HRS), the Outcomes and Assessment Information Set (OASIS), the USDA Rural-Urban Commuting Area (RUCA) codes, and the Centers for Disease Control Social Vulnerability Index (SVI). HRS is a biennial, nationally representative survey of older adults (ages 50+) with rich information on respondents' sociodemographic characteristics, economic status, health and function, and family structure and support. OASIS is a standardized patient assessment instrument completed during Medicare-funded HH episodes (at admission, discharge, and triggered by select clinical events) which captures patient clinical severity, functional impairment, and referral source. RUCA codes are public data classifying geographic areas as being metropolitan or non-metropolitan[14] and the SVI is a publicly available dataset which measures social vulnerability at the census tract level.[15] Data are deidentified, constituting exempt human subjects research.

Sample

We identified respondents to the 2012, 2014, and/or 2016 HRS who were 65 or older and community-living at the time of survey. The final analytic sample included 27,026 (weighted n=120,796,743) observations across11,425 unique individuals. We then observed HH utilization (determined by OASIS assessments, as described below) for a two-year period following each survey. Identifying HH use via OASIS, rather than HH claims, allowed us to include both FFS and Medicare Advantage enrollees in our analyses. The unit of analysis was the two-year survey/observation period; thus, an individual may appear multiple times in our sample.

Measures

Individuals can receive multiple successive HH episodes; we defined community-entry HH use as an index HH episode (i.e., the first episode during the 2-year observation period) for which the OASIS reports no institutional care use in the 14 days preceding HH admission. Institutional care use included inpatient hospital, skilled nursing facility, inpatient rehabilitation facility, and long-term acute care hospital stays. Individuals with one or more community-entry index HH episodes during the two-year observation period were considered to have incurred community-entry HH use in that period (regardless of any post-acute HH use in the same period, as these types of HH use are mutually exclusive as defined).

Sociodemographic characteristics and health and functional status measures were drawn from the HRS. Sociodemographic characteristics included age, race/ethnicity, sex, educational attainment, net worth, and Medicaid enrollment. Measures of health and functional status included current overall self-reported health status, recent decline in self-reported health, number of self-reported chronic conditions (including high blood pressure, diabetes, lung disease, heart condition, stroke, and arthritis), probable dementia, presence of depression, number of Activities of Daily Living (ADL) limitations, having a fall in the prior two years, having a Skilled Nursing Facility (SNF) stay in the prior year, and self-reported difficulty taking medications. Recent decline in self-reported health was based on an item asking respondents to compare their health at the current survey wave to their health in the previous survey wave. Probable dementia was determined based on the Hurd et al (2013) algorithm, which relies on responses to various cognitive and functional items in the HRS to determine whether the respondent has a “high probability” of dementia.[16] Depression was ascertained based on responses to the eight-item Center for Epidemiological Studies-Depression (CES-D) scale; those scoring four or higher were considered to have depression.

Measures of social support were drawn from the HRS and included living alone and types of caregiving help received (paid caregiving, family/unpaid caregiving, both, or neither). Geographic contextual factors included whether the individual resided in a metropolitan zip-code, as determined by RUCA codes, and the SVI value for the individual’s census tract of residence. RUCA codes classify geographic areas as being metropolitan or not based on measures of population density and urbanization.[14] SVI is based on U.S. census data, including the proportion of the population who are living below poverty level, unemployed,

members of a minority racial/ethnic group, living in crowded housing, etc. We use SVI percentile rankings to measure community social vulnerability, these values range from 0 to 1 and a higher value indicates an area with greater social vulnerability.[15] We include SVI in addition to individual-level sociodemographic measures in order to capture potentially relevant factors an individual may encounter in their community (e.g., factors affecting supply of HH) and individual characteristics that may influence a person's need for and/or willingness to access community-entry HH.

Analysis

For all analyses, the unit of analysis is a two-year observation period. We first generated descriptive characteristics of our analytic sample, comparing those who did versus did not use community-entry HH and testing for between-group differences using Rao-Scott Chi-Square and adjusted Wald tests. Next, we calculated unadjusted marginal probabilities of any community-entry HH use within two years of HRS survey for all values of measured sociodemographic characteristics, health and functional status measures, social support, and geographic contextual factors.

We then fit a multivariable logistic model of community-entry HH use, adjusted for sociodemographic characteristics (age, sex, race/ethnicity, educational attainment, net worth, Medicaid enrollment), health and functional status (overall health status, number of chronic conditions, probable dementia, number of ADL limitations, fall in past 2 years), and social and geographic contextual factors (types of caregiving help received, living alone, residing in a metropolitan zip-code, census tract SVI, and HRS survey year). The model was weighted to account for HRS complex survey design and provide nationally representative estimates.

STUDY RESULTS

Among our analytic sample, the overall rate of community-entry HH utilization within a two year observation period was 13.4% (3,613 of 27,026 observation periods) (Table 1). A greater proportion of those who incurred community-entry HH were 85 or older (34.3% vs 11.5%; $p<0.001$) and Medicaid enrolled (21.5% vs 8.4%; $p<0.001$). Compared to those who did not use community-entry HH, those who used community-entry HH had poorer health and function, as indicated by a greater proportion experiencing fair/poor overall health status (50.4% vs 25.3%; $p<0.001$), probable dementia (20.6% vs 4.4%; $p<0.001$), and three or more ADL limitations (12.2% vs 1.9%; $p<0.001$). Those who used community-entry HH were also more likely to receive help from family caregivers (41.0% vs 12.6%; $p<0.001$) and paid caregivers (14.3% vs 2.0%; $p<0.001$).

Lower socioeconomic status, poorer health and function, and reliance on family and paid caregivers were all associated with higher marginal probability of community-entry HH use. Medicaid enrollees had a 25% marginal probability of community-entry HH use (compared to 10% for those not enrolled in Medicaid) (Figure 1). Those with fair/poor overall health had a 20% probability (compared to 8% for those with excellent, very good, or good health) and those with probable dementia had a 37% probability (compared to 10% for those without probable dementia) (Figure 2). Those receiving family caregiver help had a 30%

marginal probability of community-entry HH use (compared to 8% for those not receiving family caregiver help) (Figure 3). Marginal probabilities of community-entry HH use did not differ meaningfully across values of geographic variables. (See Appendix Table A1 for full unadjusted Odds Ratios and marginal probabilities.)

In an adjusted model, significant predictors of community-entry HH use by observation period included older age—being over 85 (aOR=4.23; p<0.001), 80–84 (aOR=2.76; p<0.001), or 75–79 (aOR=1.84; p<0.001) compared to being under 75, female sex (aOR=1.35; p<0.001), a net worth in the lowest quartile (aOR=1.25; p=0.008), and Medicaid enrollment (aOR=1.49 p=0.001) (Table 2). Older adults were more likely to use community-entry HH if they had fair/poor overall health (aOR=1.48; p<0.001), a greater number of chronic conditions (aOR=1.17; p<0.001), 3+ ADL limitations compared to zero (aOR=1.47; p=0.007), and had fallen in the past two years (aOR=1.43; p<0.001).

Those who lived alone (aOR=1.24; p=0.03) and lived in a metropolitan zip-code (aOR=1.27; p=0.03) were more likely to use community-entry HH. Compared to those receiving no caregiver help, individuals were more likely to use community-entry HH if they received family/unpaid help only (aOR=1.81; p<0.001), both family and paid help (aOR=2.79; p<0.001), or paid help only (aOR: 3.46; p<0.001).

DISCUSSION

Among a nationally representative sample of community-living older adults, significant predictors of community-entry HH utilization included Medicaid enrollment, poorer health status, greater ADL limitations, receipt of paid and unpaid caregiving assistance, and living in a metropolitan area. Findings demonstrate the links between community-entry HH utilization and social vulnerability, clinical complexity, and reliance on caregiver support, confirming that community-entry HH serves a population with meaningful long-term care needs that is simultaneously experiencing significant clinical needs and facing elevated risk for institutionalization and avoidable health care utilization. Results highlight the need for ongoing monitoring and support of community-entry HH accessibility as this service is a key component of home-based care for a high-need, vulnerable sub-population.

Taken together, findings illustrate the fact that long-term care needs and temporary clinical needs often exist in tandem for the most vulnerable community-living older adults.[17] For example, those reporting fair/poor health and who had dementia were significantly more likely to access community-entry HH. Thus, the existence of long-term care needs may not be a compelling rationale to discourage use of community-entry HH and disincentivizing HH episodes that are not preceded by a hospitalization overlooks the significant needs for clinical care present in community-living older adults and the value of meeting these needs before they intensify to an acute-level event. Multivariable models suggest decreased odds of community-entry HH use over time, a finding that merits further investigation. Although further research is needed, existing evidence suggests that safeguarding access to community-entry HH may benefit older adults, health systems, and payers by potentially reducing rates of avoidable hospitalization.

Moreover, a higher marginal probability of community-entry HH use was observed among those reporting that they had recently experienced a decline in health status, fall(s), and/or a temporary SNF stay. These findings signal that physicians may respond to a trajectory of clinical or functional decline (i.e., rising risk) with a community-entry HH referral, in an effort to address emerging care needs while avoiding institutionalization, Emergency Department (ED) use, and/or hospitalization. This provides further evidence that community-entry HH serves a population experiencing elevated risk for escalating care needs that may be addressed through temporary skilled care at home. HH may be particularly valuable for older adults who are non-white and/or lower-income; these groups were found to have both higher rates of community-entry HH use and a 2023 Medicare Payment Advisory Commission (MedPAC) report finds that they are also at greater risk for potentially-preventable hospitalization and ED use.[18]

As the locus of long-term care continues to shift from institutions into the community, a trend accelerated by the COVID-19 pandemic, the proportion of those aging in place with mounting functional limitations and concomitant long-term care needs will only increase. Yet, current payment and delivery systems are not optimized to meet the aging population's care needs in the community; community-living older adults must rely on a patchwork of support from family caregivers, paid aides, Medicaid-funded home-and community-based services, and Medicare-funded home-based clinical care.[19–22] This unwieldly system contributes to caregiver burden and burnout, causes financial strain as families spend down their assets to afford care, and increases unmet care needs due to barriers to access such as long waitlists.[22–25] Thus, there is growing interest in building an accessible and high-quality home-based care ecosystem for older adults which better integrates temporary/episodic and longitudinal care.[26]

Community-entry HH fills an important niche by supporting individuals with significant care needs and social vulnerabilities as they age in place. Modifications to eligibility criteria, clinical workflows, and/or reimbursement may be necessary to more clearly define the role of community-entry HH and position the benefit to better meet the unique needs of its patient population. In particular, exploring options for linking community-entry HH patients to appropriate sources of community-based long-term care could prove a valuable addition to existing practice patterns. However, in the near-term, it is equally important to monitor community-entry HH use and care delivery patterns following PDGM implementation and to safeguard access to this key resource for high-need older adults aging in place.

Limitations

Strengths of this work include use of a rich dataset for a large, nationally representative cohort of community-living older adults, examination of factors at the individual, family, and community levels, and inclusion of both FFS and Medicare Advantage enrollees. Several limitations merit comment. First, we rely on OASIS data to determine referral source. This approach allowed us to include Medicare Advantage enrollees in our sample, but there is limited data regarding the psychometric properties of the OASIS in accurately capturing prior hospitalization[27,28] and evidence suggests higher levels of missingness for Medicare Advantage enrollees.[29] Additionally, prior work suggests that Medicare Advantage

enrollees have lower rates of HH utilization overall and that aspects of Medicare Advantage plan design, such as cost-sharing requirements, influence beneficiary HH utilization.[30] Although we may undercount the total number of community-entry HH episodes by including Medicare Advantage enrollees, we feel this drawback is outweighed by the value of including Medicare Advantage enrollees, who have been excluded from all previous analyses of HH by referral source and now constitute 50% of the Medicare population.[7,9,13,31] Our findings remained consistent with a sensitivity analysis limiting the sample to FFS enrollees (see Appendix Table A2).

Data predate two events likely to impact patterns of HH use: the COVID-19 pandemic and 2020 implementation of the PDGM. COVID-19 may have increased community-entry HH use by spurring concerns regarding infection risk in institutional care settings, and PDGM may have decreased community-entry HH use by reducing reimbursement for this type of HH.[32] Further analysis investigating changes in community-entry HH use using post-2020 data is warranted. Additionally, we do not control for prior post-acute HH use; previous HH use may impact individuals' awareness of the HH benefit and/or willingness to accept a community-entry HH referral. Models do not adjust for the time lag between HRS survey and HH episode. This may lead to an underestimation of the impact of changes in health status on community-entry HH use, as declines in health status may occur after the survey but before the HH episode, and does not account for competing risks including institutionalization and death.

CONCLUSIONS AND IMPLICATIONS

Among community-living older adults, lower socioeconomic status, poorer health and function, and reliance on family and paid caregivers were significant predictors of community-entry HH use. Findings highlight community-entry HH's role as a key care setting for a uniquely high-need and potentially vulnerable sub-population, indicate the need to carefully monitor HH access among these groups following recent Medicare payment system revisions, and call attention to the need for accessible services aimed at managing older adults' overlapping clinical and social needs while avoiding institutionalization.

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APPENDIX

Table A1.

Unadjusted Odds Ratios and Marginal Probabilities of Community-Entry Home Health Care Use, by Community-Living Older Adult Characteristics (n=27,026; wtd n=120,796,743)*

	Odds Ratio (95% CI)	Marginal Probability
Sociodemographic Characteristics		
Age		
<75	REF	5.9 (4.8–7.0)
75–79	1.90 (1.56–2.31)	10.7 (9.5–11.8)
80–84	3.22 (2.63–3.93)	16.8 (15.0–18.6)
85+	6.10 (4.98–7.47)	27.7 (25.1–30.3)
Female sex		
No	REF	8.8 (7.7–9.8)
Yes	1.62 (1.43–1.84)	13.5 (12.2–14.7)
Race/ethnicity		
White, Non-Hispanic	REF	10.2 (9.2–11.1)
Black, Non-Hispanic	1.66 (1.33–2.06)	15.8 (13.2–18.5)
Hispanic/Latino	2.04 (1.23–3.39)	18.8 (11.4–26.2)
Other Non-Hispanic	1.45 (0.82–2.59)	14.2 (7.2–21.1)
Less than high school education		
No	REF	9.8 (8.9–10.6)
Yes	2.22 (1.82–2.69)	19.4 (16.4–22.4)
Net worth in lowest quartile		
No	REF	10.1 (9.1–11.1)
Yes	1.63 (1.35–1.97)	15.5 (13.2–17.7)
Medicaid enrolled		
No	REF	9.9 (9.0–10.7)
Yes	2.98 (2.30–3.85)	24.6 (20.1–29.0)
Health and functional status		
Overall self-reported health status is fair/poor		
No	REF	7.9 (7.0–8.7)
Yes	3.00 (2.72–3.31)	20.4 (18.7–22.1)***
Recent decline in health		
No	REF	8.7 (7.8–9.6)
Yes	2.38 (2.15–2.63)	18.5 (16.7–20.2)***
Number of self-reported chronic conditions	1.52 (1.37–1.46)	3.3 (3.0–3.8)
Probable Dementia		
No	REF	9.7% (8.7–10.6)
Yes	5.59 (4.77–6.55)	37.4 (34.0–40.9)***
Number of ADL limitations		

	Odds Ratio (95% CI)	Marginal Probability
0	REF	8.9 (8.1–9.7)
1–2	4.65 (4.02–5.38)	31.3 (27.9–34.6)
3+	8.64 (7.05–10.59)	45.8 (40.5–51.1)***
Fall in past 2 years		
No	REF	8.4 (7.5–9.3)
Yes	2.18 (1.98–2.40)	16.7 (15.2–18.1)***
SNF use in prior year		
No	REF	10.8 (9.8–11.9)
Yes	4.14 (3.41–5.01)	33.5 (29.1–37.8)***
Presence of depression		
No	REF	9.2 (8.2–10.2)
Yes	2.85 (2.49–3.27)	22.4 (20.4–24.5
Difficulty taking medications		
No	REF	10.4 (9.4–11.3)
Yes	4.67 (3.85–5.66)	35.1 (31.0–39.2)
Social and Geographic Contextual Factors		
Lives alone		
No	REF	9.9 (8.8–11.1)
Yes	1.58 (1.33–1.89)	14.9 (13.1–16.6)
Receives any family caregiver help		
No	REF	8.0 (7.2–8.8)
Yes	4.83 (4.24–5.50)	29.6 (26.8–32.3)
Receives any paid caregiver help		
No	REF	10.1 (9.2–11.0)
Yes	8.27 (6.76–10.11)	48.2 (43.2–53.2)
Metropolitan (zip-code)		
No	REF	10.2 (8.8–11.6)
Yes	1.17 (0.97–1.42)	11.8 (10.6–13.0)
Social Vulnerability Index (census tract)	2.68 (1.85–3.88)	10.0 (6.2–13.7)
Core survey year		
2012	REF	13.2 (12.2–14.3)
2014	0.91 (0.88–0.95)	12.2 (11.1–13.3)
2016	0.64 (0.61–0.69)	8.9 (8.0–9.9)

* Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents

Table A2.

Adjusted Odds of Community-Entry Home Health Use within 24 months, Among Community-Living Medicare Fee-For-Service Enrollees Only

Characteristic	FFS Enrollees Only (n=12,695; wtd n=57,138,693)	
	aOR (95% CI)	[p-value]
Age		
<75	REF	REF
75–79	1.85 (1.51–2.28)	[<0.001]
80–84	2.71 (2.16–3.42)	[<0.001]
85+	4.00 (2.96–5.42)	[<0.001]
Female sex	1.28 (1.06–1.55)	[<0.001]
Race/ethnicity		
White, Non-Hispanic	REF	REF
Black, Non-Hispanic	1.18 (0.81–1.70)	[0.38]
Hispanic/Latino	2.03 (1.24–3.32)	[0.005]
Other Non-Hispanic	2.03 (1.00–4.05)	[0.05]
Less than high school education	1.11 (0.87–1.42)	[0.39]
Net worth in lowest quartile	1.30 (1.07–1.60)	[0.01]
Medicaid enrolled	1.34 (0.93–1.94)	[0.12]
Overall self-reported health status is fair/poor	1.59 (1.37–1.85)	[<0.001]
Number of self-reported chronic conditions	1.15 (1.07–1.22)	[<0.001]
Probable Dementia	1.33 (1.05–1.68)	[0.02]
Number of ADL limitations		
0	REF	REF
1–2	1.34 (0.99–1.80)	[0.05]
3+	1.77 (1.09–2.88)	[0.02]
Fall in past 2 years	1.44 (1.25–1.65)	[<0.001]
Types of caregiver help		
None	REF	REF
Paid help only	3.09 (1.62–5.87)	[0.001]
Family/unpaid help only	1.86 (1.48–2.33)	[<0.001]
Both paid and family/unpaid help	2.53 (1.49–4.28)	[0.001]
Lives alone	1.22 (0.95–1.57)	[0.12]
Metropolitan zip-code	1.52 (1.22–1.90)	[<0.001]
Social Vulnerability Index (census tract level)	1.99 (1.30–3.04)	[0.002]
Core survey year		
2012	REF	
2014	0.92 (0.86–0.98)	[<0.001]
2016	0.57 (0.51–0.64)	[<0.001]

* Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents.

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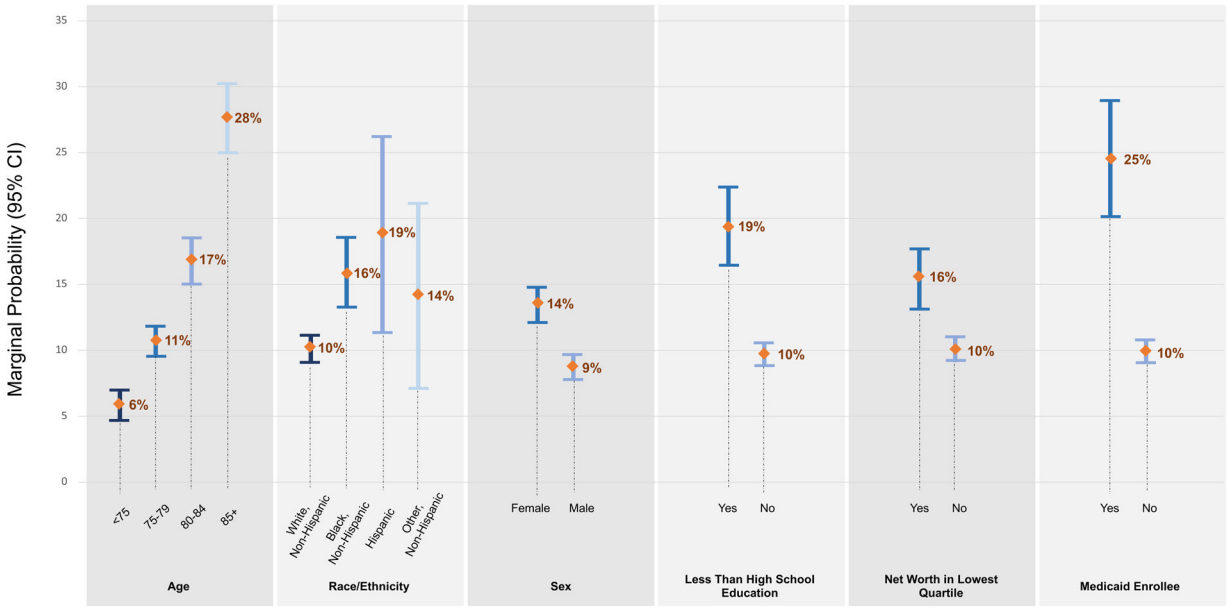

Figure 1.

Marginal Probabilities of Community-Entry Home Health Use among Community-Living Older Adults, by Sociodemographic Characteristics*

*Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents; 27,026 two-year observation periods for 11,425 unique individual respondents.

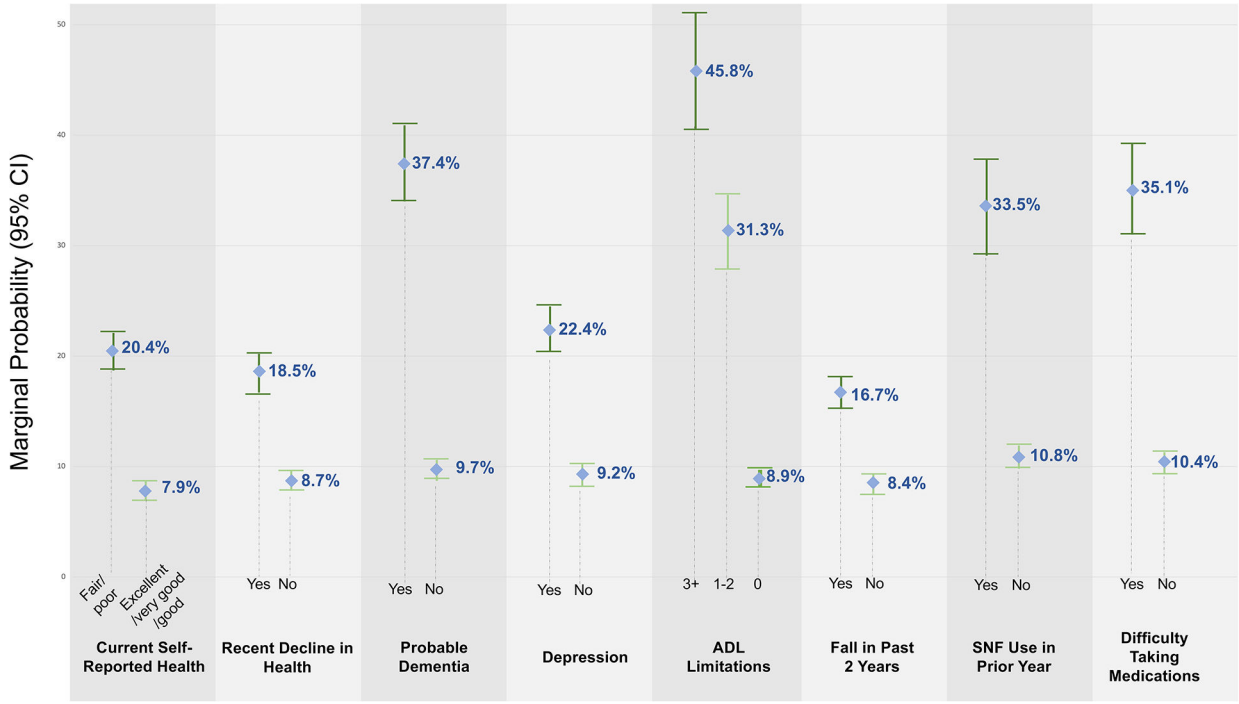

Figure 2.

Marginal Probabilities of Community-Entry Home Health Use among Community-Living Older Adults, by Health and Functional Status*

*Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents; 27,026 two-year observation periods for 11,425 unique individual respondents.

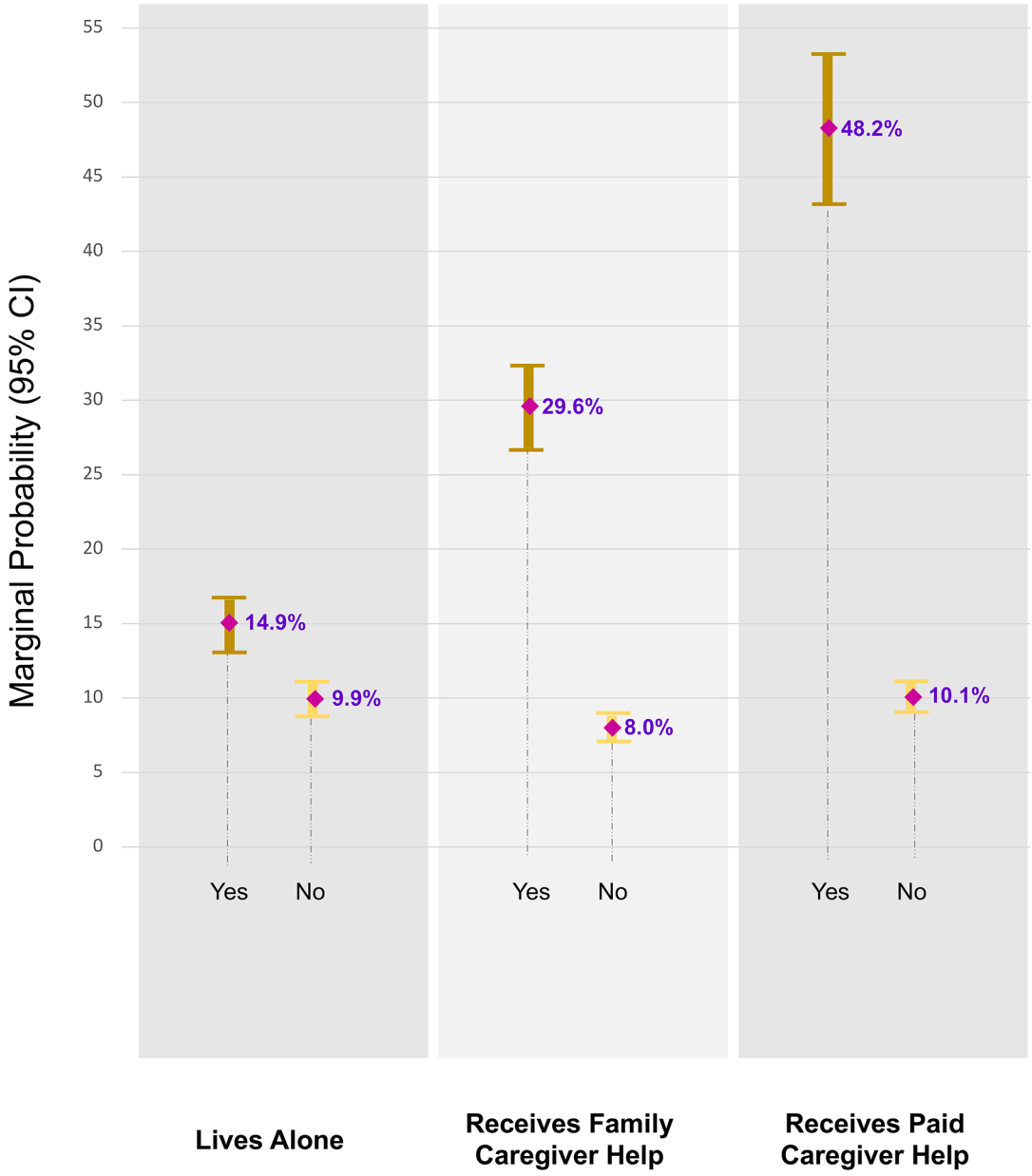

Figure 3.

Marginal Probabilities of Community-Entry Home Health Use, by Social Support Factors*

*Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents; 27,026 two-year observation periods for 11,425 unique individual respondents.

Table 1.

Characteristics of Community-Living Older Adults, by Use of Community-Entry Home Health *

Characteristic	Full sample (n=27,026; wtd n=120,796,743)	No Community-Entry HH Use (n=23,413; wtd n=107,09,306)	Community-Entry HH Use (n=3,613; wtd n=13,787,437)	p-value
	n (col %) or mean ± SE			
Sociodemographic Characteristics				
Age				<0.001
<75	11,378 (52.8)	10,582 (56.1)	796 (27.3)	
75–79	6,743 (18.9)	5,918 (19.1)	825 (17.7)	
80–84	4,762 (14.1)	3,915 (13.3)	847 (20.7)	
85+	4.143 (14.1)	2,998 (11.5)	1,145 (34.3)	
Female sex	15,800 (56.1)	13,415 (54.8)	2,385 (66.3)	<0.001
Race/ethnicity				0.002
White, Non-Hispanic	19,941 (81.4)	17,548 (82.6)	2,393 (72.7)	
Black, Non-Hispanic	3,825 (8.5)	3,183 (8.0)	642 (11.7)	
Hispanic/Latino	2,636 (7.6)	2,148 (6.9)	488 (12.5)	
Other Non-Hispanic	624 (2.5)	534 (2.5)	90 (3.2)	
Less than high school education	5,572 (17.0)	4,425 (15.4)	1,147 (28.8)	<0.001
Net worth in lowest quartile	7,401 (24.5)	6,136 (23.4)	1,265 (33.2)	<0.001
Medicaid enrolled	3,030 (9.9)	2,253 (8.4)	777 (21.5)	<0.001
Health and functional status				
Fair/poor self-reported health status	8,304 (28.2)	6,455 (25.3)	1,849 (50.4)	<0.001
Recent decline in health	7,551 (27.5)	5,986 (25.3)	1,565 (44.6)	<0.001
Number of chronic conditions	1.96 (0.02)	1.88 (0.02)	2.61 (0.04)	<0.001
Probable Dementia	2,094 (6.3)	1,316 (4.4)	778 (20.6)	<0.001
Presence of depression	4,912 (16.6)	3,676 (14.5)	1,236 (32.6)	<0.001
Number of ADL limitations				<0.001
0	24,125 (90.9)	21,588 (93.4)	2,537 (71.1)	
1–2	1,877 (6.1)	1,259 (4.7)	618 (16.7)	
3+	1,003 (3.0)	552 (1.9)	451 (12.2)	
Fall in past 2 years	9,909 (36.3)	8,043 (34.2)	1,866 (53.1)	<0.001
SNF stay in prior year	781 (2.6)	495 (1.9)	286 (7.5)	<0.001
Difficulty taking medications	913 (2.8)	583 (2.1)	330 (9.0)	<0.001
Social and Geographic Contextual Factors				
Lives alone	7,722 (30.0)	6,448 (28.8)	1,274 (39.0)	<0.001
Receives any family caregiver help	4,904 (15.8)	3,378 (12.6)	1,526 (41.0)	<0.001
Receives any paid caregiver help	1,008 (3.4)	524 (2.0)	484 (14.3)	<0.001

Characteristic	Full sample (n=27,026; wtd n=120,796,743)	No Community-Entry HH Use (n=23,413; wtd n=107,09,306)	Community-Entry HH Use (n=3,613; wtd n=13,787,437)	p-value
	n (col %) or mean ± SE			
Metropolitan (zip-code)	21,186 (78.4)	18.242 (78.1)	2,944 (80.7)	0.10
Social Vulnerability Index (census tract)	0.48 (0.01)	0.47 (0.01)	0.55 (0.02)	<0.001
Core survey year				
2012	9,526 (32.1)	8,102 (31.5)	1,424 (37.3)	<0.001
2014	9,075 (33.3)	7,801 (33.0)	1,274 (35.7)	
2016	8,425 (34.6)	7,510 (35.5)	915 (27.1)	

*Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents; 27,026 two-year observation periods for 11,425 unique individual respondents.

Table 2.

Adjusted Odds of Community-Entry Home Health Use within 24 months among Community-Living Older Adults*

Older Adult Characteristics	aOR (95% CI)	p-value
Age		
<75	REF	
75–79	1.84 (1.52–2.23)	<0.001
80–84	2.76 (2.29–3.32)	<0.001
85+	4.23 (3.49–5.13)	<0.001
Female sex	1.35 (1.15–1.58)	<0.001
Race/ethnicity		
White, Non-Hispanic	REF	
Black, Non-Hispanic	1.11 (0.83–1.48)	0.47
Hispanic/Latino	1.25 (0.74–2.11)	0.41
Other Non-Hispanic	1.62 (0.94–2.76)	0.08
Less than high school education	1.02 (0.86–1.20)	0.84
Net worth in lowest quartile	1.25 (1.06–1.47)	0.008
Medicaid enrolled	1.49 (1.18–1.88)	0.001
Overall self-reported health status is fair/poor	1.48 (1.30–1.70)	<0.001
Number of self-reported chronic conditions	1.17 (1.13–1.21)	<0.001
Probable Dementia	1.25 (1.00–1.56)	0.05
Number of ADL limitations		
0	REF	
1–2	1.19 (0.96–1.48)	0.11
3+	1.47 (1.12–1.94)	0.007
Fall in past 2 years	1.43 (1.27–1.61)	<0.001
Types of caregiver help		
None	REF	
Paid help only	3.46 (2.09–5.71)	<0.001
Family/unpaid help only	1.81 (1.52–2.15)	<0.001
Both paid and family/unpaid help	2.79 (1.92–4.05)	<0.001
Lives alone	1.24 (1.02–1.50)	0.03
Metropolitan zip-code	1.27 (1.02–1.59)	0.03
Social Vulnerability Index (census tract level)	1.43 (0.96–2.13)	0.08
Core survey year		
2012	REF	
2014	0.86 (0.82–0.89)	<0.001
2016	0.60 (0.56–0.64)	<0.001

*Data from 2012, 2014, and 2016 Health and Retirement Survey (HRS) respondents; 27,026 two-year observation periods for 11,425 unique individual respondents.