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### Authors

Ankuda, Claire K  
Leff, Bruce  
Ritchie, Christine S  
[et al.](#)

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## Implications of 2020 Skilled Home Healthcare Payment Reform for Persons with Dementia

Claire K. Ankuda, MD, MPH<sup>\*</sup>, Bruce Leff, MD<sup>†</sup>, Christine S. Ritchie, MD, MSPH<sup>‡</sup>, Omari-Khalid Rahman, MS<sup>\*</sup>, Katelyn B. Ferreira, MPH<sup>\*</sup>, Evan Bollens-Lund, MS<sup>\*</sup>, Katherine A. Ornstein, MPH, PhD<sup>\*</sup>

<sup>\*</sup> Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, New York <sup>†</sup> Division of Geriatric Medicine, Johns Hopkins University School of Medicine, Baltimore, Maryland <sup>‡</sup> Mongan Institute Center for Aging and Serious Illness, Massachusetts General Hospital, Boston, Massachusetts

### Abstract

**BACKGROUND/OBJECTIVES**—The Medicare home health benefit provides episodic skilled home-based clinical care to the growing population of community-dwelling persons with dementia. As of January 1, 2020, home health payment changed: episodes shortened from 60 to 30 days, and episodes initiated in the community are now reimbursed at lower rates than episodes following institutional stays. We aim to assess the potential impact of these policy changes on this population.

**DESIGN/SETTING**—Cross-sectional study using the Medicare claims-linked National Health and Aging Trends Study (NHATS).

**PARTICIPANTS**—A total of 1,867 NHATS respondents who received home health between 2011 and 2017.

**MEASUREMENTS**—Dementia was defined through both self-report and a validated cognitive assessment through NHATS. We described the demographic, socioeconomic, and health characteristics of older adults with dementia receiving home health compared with those without dementia. We then assessed the association of dementia with both receiving community-initiated home health (vs postinstitutional) and visit timing during the home health episode.

**RESULTS**—Over a follow-up period of just over 4 years, 50.2% of persons with dementia used home health compared with 15.3% of persons without dementia. Most home health provided to

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Address correspondence to Claire K. Ankuda, MD, MPH, Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, One Gustave L. Levy Place, Box 1070, New York, NY 10029., [claire.ankuda@mssm.edu](mailto:claire.ankuda@mssm.edu).

**Author Contributions:** Study concept and design: C.K.A., B.L., C.S.R., O.R.K., K.B.F., E.B.L., and K.A.O.; acquisition of data: C.K.A., O.R.K., E.B.L., and K.A.O.; analysis and interpretation of data: C.K.A., B.L., C.S.R., O.R.K., K.B.F., E.B.L., and K.A.O.; preparation of manuscript: C.K.A., B.L., C.S.R., O.R.K., K.B.F., E.B.L., and K.A.O.

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### SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article.

persons with dementia was initiated in the community (61%), compared with 37% of episodes provided to persons without dementia. Persons with dementia were more likely to receive care in days 31 to 60 of the episode compared with those without dementia.

**CONCLUSIONS**—Shortening episodes and reimbursing community-initiated episodes at lower rates may disproportionately impact the highly vulnerable population of older adults with dementia, who receive more community-initiated care over longer time periods. Our work highlights the need to better understand the unique role of home health in meeting gaps in both acute- and long-term care systems for older adults with dementia.

### Keywords

dementia; Medicare; home health; post-acute care

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## INTRODUCTION

The Medicare home health benefit provides essential care for the nearly 4.5 million people in the United States with dementia aging in place in the community.<sup>1</sup> Home health provides episodic home visits from nurses, therapists (physical, occupational, and speech), and personal care aides for homebound individuals with need for either nursing or therapy. The use of Medicare home health has been increasing: from 2000 to 2017, the proportion of enrollees in traditional Medicare who received home health services rose from 7.4% to 8.8%, or from 2.5 million to 3.5 million beneficiaries.<sup>2</sup> This growth is likely due to a number of factors, including a growing population of older adults with functional disability, a shift from institutional to home-based care for this population,<sup>3</sup> and the use of such care to expedite the movement of patients out of the high-cost hospital setting.

Medicare home health is an important and uniquely accessible source of in-home support for older adults with dementia. Unlike long-term care, which includes a range of services designed to meet a patient's health or personal care needs, Medicare home health is intended to meet short-term skilled needs (such as nursing or physical therapy) of homebound patients, which may include a limited amount of home health aide support during the period of skilled need. It is an episodic benefit and is covered under traditional (or fee-for-service) Medicare without copayments, can be initiated in the community, and is available in nearly every county in the United States.<sup>2</sup> Prior work has demonstrated that a longer duration and greater intensity of Medicare home health nursing visits reduce readmissions for the general Medicare population<sup>4</sup> and specifically for older adults with dementia.<sup>5</sup> This is particularly important for those with dementia, as they are at heightened risk for rehospitalizations.<sup>6</sup> Multiple clinical trials have demonstrated efficacy of physical therapy interventions to support health and function in older adults with dementia.<sup>7–10</sup> Medicare home health care is therefore critical in meeting the significant medical and skilled therapy needs of persons with dementia to help them remain at home.

Before January 1, 2020, Medicare's home health Prospective Payment System paid for care in 60-day episodes, with individuals receiving additional episodes if they continued to be homebound and a physician certified ongoing need for skilled care. Payments for episodes were based on clinical and functional factors, the number of therapy visits provided, and

whether an episode was the first in a sequence of multiple episodes. Centers for Medicare & Medicaid Services (CMS) regulators have remained wary that Medicare overpays home health agencies for services provided and that home health is inappropriately used.<sup>2,11</sup> In January 2020, Medicare introduced the Patient Driven Groupings Model (PDGM) to pay for home health, which links reimbursement levels to clinical groupings, such as wound care and musculoskeletal rehabilitation.<sup>12</sup> The new policy also made a number of key modifications, including shortening the episode length from 60 to 30 days and increasing reimbursements for postinstitutional stays (those following acute care, skilled nursing, or other facility stays) relative to episodes that are initiated in the community.

In the past, changes in home health payment have radically shaped care delivery. For example, the Balanced Budget Act (BBA) of 1997 instituted a payment system that resulted in a shift away from home health aide visits, which particularly impacted the oldest adults, women, and those from racial and ethnic minority groups.<sup>13–16</sup> The most recent payment system, instituted in 2000 and ending in December 2019, capped payments and introduced the inclusion of the number of therapy visits in the model used to determine payment amounts per episode. Following this, the proportion of home health episodes where therapy was provided increased from 19% in 2000 to 43% in 2017.<sup>2</sup> Additionally, following the 1997 BBA, length of stay in home health decreased,<sup>17</sup> and the care setting shifted from the home to institutional settings.<sup>15</sup> If older adults with dementia use more community-initiated home health, PDGM may result in a disincentive for agencies to care for this population. Similarly, if older adults with dementia have a longer duration of home health need, given their functional and cognitive impairments,<sup>18</sup> they may be more likely to experience administrative delays and agencies may face increased administrative burden from recertification of their home health stays.

We examined differences in home healthcare utilization among home healthcare recipients with and without dementia who may be directly impacted by the PDGM. We aimed to assess if persons with dementia who receive skilled home health care were more likely to receive community-initiated care compared with those without dementia. We also aimed to assess if persons with dementia had a longer duration of care in home health (e.g., more episodes), as well as more visits during days 31 to 60 of the episode, compared with those without dementia. We hypothesized that patients with dementia will receive more community-initiated care, have a longer duration of care, and have more visits in the last 30 days of 60-day care episodes. Although longer and more community-initiated home health use by older adults with dementia may indicate that home health is being used as a substitute for long-term care, it may alternatively indicate that the short-term skilled needs of this population are fundamentally different than those of the population without dementia.

## METHODS

### Cohort

The sample for the present analysis was drawn from participants in the National Health and Aging Trends Study (NHATS), an ongoing national longitudinal study sponsored by the National Institute on Aging (Grant NIA U01AG32947) and conducted by the Johns Hopkins University to enhance understanding of trends and trajectories of late-life disability. The

NHATS sample is drawn from the Medicare enrollment file and is nationally representative of Medicare beneficiaries aged 65 years and older.<sup>19,20</sup> NHATS participants consent to link their survey data to the Medicare claims files, including home health files (via Medicare Parts A and B). Our study cohort included persons from the NHATS 2011 to 2017 surveys who were enrolled in fee-for-service Medicare for at least 12 months prior and had one or more home health claims in the Medicare files.

## Measures

**Skilled Home Health Patterns**—We characterized skilled home health utilization that mimics CMS designations used to define the 2020 payment policy changes. We considered the sequence of home health episodes, which contain one or more episodes with less than 60 days between them. The first episode in the sequence was considered the initial episode, and all others were considered subsequent. Sequences were considered postinstitutional if an individual was discharged from a hospital (i.e., a post-acute care stay), skilled nursing facility, long-term care hospital, inpatient rehabilitation, or inpatient psychiatric unit 14 days or fewer before the start of the sequence's initial episode. All other sequences were considered community initiated. Because patients with dementia have longer sequences of care, we limited our analysis of visit patterns within episodes to the initial episode in each sequence.

**Dementia**—Dementia status was based on reports of clinical diagnosis, proxy responses to the AD8 Dementia Screening interview, and cognitive testing; this has previously been described in published NHATS protocols.<sup>21</sup> Sequences were determined to be provided to an individual with dementia if the respondent was identified as having probable dementia in either the concurrent interview 1 year prior or 1 year after the year of initiation of a home health sequence. Individuals with no report of dementia in any NHATS interview were classified as not having dementia. There were no individuals who had a dementia classification in an interview 2 or more years before or postinitiation of a home health sequence.

**Additional Covariates**—All other demographic and clinical characteristics were identified from the NHATS interview immediately before the home health sequence.

## Analysis

We first compared the demographic, clinical, and care patterns of the people with and without dementia who received Medicare skilled home health care in our sample. Given that one individual could receive multiple sequences of home health, and characteristics such as age and Medicaid enrollment could vary over time, we limited this analysis to the first observation of home health for each unique person in our cohort. Next, using all observations of home health, we assessed the intensity of home health use over the study period (in terms of both sequences/person and average number of episodes/sequence) for people with and without dementia. We then estimated the proportion of sequences that were community initiated among those provided to persons with dementia versus persons without dementia. Given that access to Medicaid-provided long-term services and supports could reduce use of community-initiated home health, we then stratified the analysis by Medicaid

status. Next, we compared the numbers of home health visits made by any provider type (therapist, nurse, aide, or social worker) in days 1 to 30 and in days 31 to 60 of initial episodes for sequences provided to persons with versus without dementia. Only episodes for which an individual was neither (1) admitted to a hospital or hospice nor (2) died within the full 60 days of the episode were included in the analysis of visit patterns; this was done to limit potential bias associated with outcomes differential by dementia status. As a sensitivity test, the analysis was then repeated without these exclusions. Finally, to better understand the factors contributing to community-initiated care, we used logistic regression models to determine the independent association of dementia with odds of having a community-initiated sequence. We repeated both analyses for community-initiated home health and visit patterns in days 31 to 60 to assess for temporal trends in the proportion of community-initiated home health and the mean number of visits on days 31 to 60. For all analyses, we used NHATS survey weights to account for complex survey design and sampling strategy. All analyses were performed using Stata 16 (StataCorp).

## RESULTS

In the entire NHATS survey, over an average follow-up time of 4.1 years for those with dementia and 4.5 years for those without dementia, 50.2% of those with dementia used skilled home health compared with 25.3% of those without dementia. This resulted in a cohort of 1,867 individuals who received home health, 30.4% of whom had dementia. Those with dementia received 1.6 sequences of skilled home health over the study period compared with 1.4 sequences per person for those without dementia. Sequences provided to persons with dementia were also longer, with an average of 2.2 episodes per sequence (standard error (SE) of 0.1) as opposed to 1.9 episodes per sequence for nondementia sequences (SE of 0.1).

The individuals receiving home health who had dementia varied significantly from those without dementia (Table 1). They were older, more likely to be on Medicaid, more likely to be black or Hispanic and less likely to be white, more likely to have been in the lowest quartile by income, less likely to have a high school education, and less likely to live in the Midwest. Persons with dementia in our cohort of home health users also had higher rates of disability and illness. Although 79.8% of skilled home health recipients without dementia had no impairments of activities of daily living in their NHATS interview before first receipt of home health, this was true for only 41.4% of those with dementia. Individuals with dementia were also more likely to be homebound on their prior NHATS interview (rarely or never leaving home), report health as fair or poor, and have four or more chronic conditions. More of those with dementia died in the year after their first receipt of home health (27.3%) compared with those without dementia (15.0%).

Of the sequences of home health provided to persons with dementia, 61% were initiated in the community, and 39% were initiated following institutional stays. The reverse was true of the sequences provided to persons without dementia: only 37% were initiated in the community, but 63% followed an institutional stay (Figure 1). Even after adjusting for demographic, clinical, and functional characteristics that differed between the individuals represented in sequences provided to those with and without dementia, sequences provided to people with dementia were more likely to be initiated in the community (Table 2). In



resolve than the medical problems driving home health use for those without dementia. For example, older adults with dementia may be more likely to use home health for problems such as falls due to progressive deconditioning and infections due to dysphagia or skin wounds. In addition, cognitive impairment and physical debility in this population may require longer periods of care even for the same medical problems. Finally, it is possible that some of the community-initiated, longer-duration home health use is driven by unmet long-term care needs, for which home health is serving as a bandage or partial substitute for fulltime nursing and aide services. However, when we stratified by Medicaid status, we did not find decreasing rates of reliance on community-initiated home health. Indeed, Medicaid enrollees, regardless of dementia, had similar use patterns to those with dementia not enrolled in Medicaid.

Although our study describes the current differences in skilled home health use between those with and without dementia, it is impossible to predict the exact impact of the PDGM reforms. Although agencies may still recertify a patient for an unlimited number of home health episodes in PDGM who continue to qualify for skilled home health care, persons with dementia will be more likely to experience delays or interruptions in care due to the administrative burden placed by requiring more frequent recertifications.<sup>22</sup> However, this effect may be mitigated by efforts to ease recertification burdens, such as shifts to electronic recertification processes. Similarly, the relatively lower reimbursement for community-initiated episodes of care may disincentivize agencies from caring for persons with dementia in the community, a concern raised by an expert panel.<sup>23</sup> However, given that PDGM removes an incentive to deliver greater therapy visits, this might make a community-initiated referral more appealing than one from an inpatient setting that may require a higher intensity of physical therapy. The impact of PDGM's clinical groupings on older adults with dementia is uncertain and will need to be closely monitored. In addition, PDGM directly impacts Medicare fee-for-service beneficiaries. The receipt of home health by Medicare Advantage (MA) enrollees with dementia is unknown. As we do not have data from MA enrollees, we cannot assess the experience of those in managed Medicare/Medicaid plans. Finally, given that PDGM removes the direct incentive for therapy (physical, occupational, or speech) visits, it will be important to assess how the types of visits delivered to those with dementia are impacted by PDGM reforms, and if this impacts outcomes, such as function, caregiving needs and burden, and hospitalization.

The differences in home health use between older adults with and without dementia, as well as the recent PDGM reform, must be contextualized in the ongoing tension of the role of the Medicare skilled home health benefit in the context of long-term care. Skilled home health has been a component of Medicare since its inception, primarily to help people transition from the acute-care setting to home, and later to help people in the community with short-term skilled care needs.<sup>11</sup> Although the home health benefit predominantly delivered aide visits in the 1990s, CMS regulators have remained wary that the benefit functions as a de facto long-term care benefit.<sup>2,11</sup> The significant changes made to home healthcare reimbursement over the last several decades, including the PDGM, swing to the extremes of the pendulum and underscore the lack of any coherent approach to long-term care in the United States. If home health is to remain separate from long-term care, then alternatives



must be found to support high-need older adults through both integrated skilled medical and long-term care services.<sup>24</sup>

This study demonstrates the policy and research opportunity to proactively monitor unintended consequences of home health payment reform,<sup>25</sup> especially for vulnerable populations, such as those with dementia, as well as to better understand the role of home health in supporting this population. Such proactive anticipation of unintended consequences of the reform may reduce harm, whether that harm be through increasing inequity by reducing home health access to already underserved populations or through ineffective delivery of this valuable benefit to those who need it most.<sup>26,27</sup>

There are several policy actions that could offset these potential disincentives for agencies to deliver high-quality home health care for persons with dementia. First, CMS could conduct a formal evaluation of the policy change on older adults with dementia, in particular those from socioeconomically vulnerable groups and racial and ethnic minorities. Although assessing the potential impact of PDGM's new clinical groupings was outside the scope of this project, CMS could consider adjusting the reimbursement for the groupings most frequently assigned to persons with dementia or even adding a dementia payment adjustor. The patterns of the PDGM clinical groupings for those with dementia are unknown, and future post-PDGM reform research will need to assess this. As function and comorbidities are included as adjustors, it would be feasible to include a similar cognitive adjustor. Although reliance on medical records will likely result in dementia underdiagnosis,<sup>28</sup> over time, coding for dementia would likely improve if incentivized. In addition, CMS could closely monitor hospitalization and emergency department visit rates after the cessation of home health care specifically for those with dementia. With the shortened episode length, CMS could track data on delays and patient experience with recertification. Overall, it will be critical for CMS to assess whether access to home health changes for persons with dementia.

## CONCLUSIONS

Changes in home health payment policy may have adverse and disparate effects on persons with dementia. Monitoring for adverse effects of PDGM and considering payment model changes to incentivize care for persons with dementia are important to ensuring safe aging in place in the community for this vulnerable population. Moreover, the sustained, community-initiated use of Medicare home health by older adults with dementia may be indicative of unmet long-term care needs that must be systematically addressed in the coming decades.

## Supplementary Material

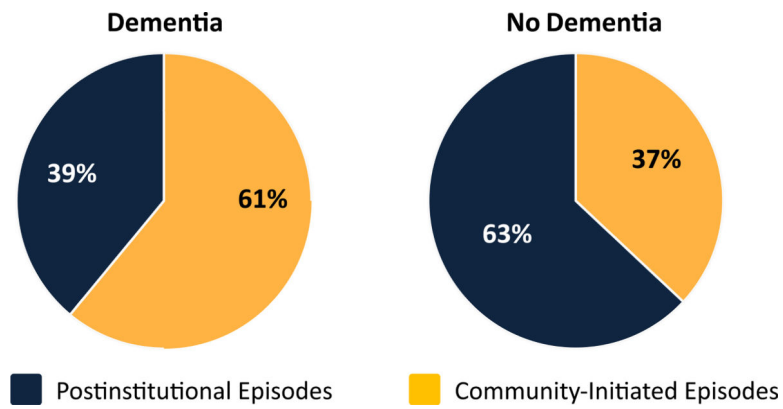
Refer to Web version on PubMed Central for supplementary material.

## ACKNOWLEDGMENTS

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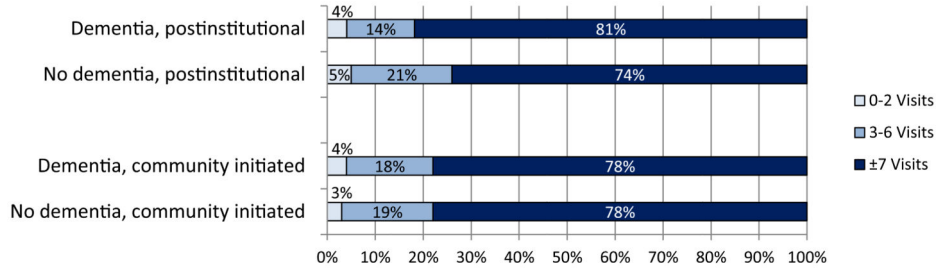
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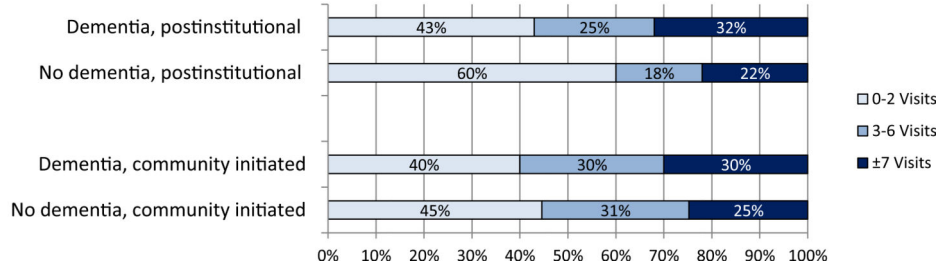


**Figure 1.** Proportion of community-initiated versus postinstitutional episodes for individuals with and without dementia. Source: National Health and Aging Trends Study, 2011 to 2017. *Note:* All proportions are adjusted by survey weights to account for survey design and sampling approach.

**(A) Days 1-30**



**(B) Days 31-60**



**Figure 2.**

Visit intensity in days 1 to 30 and 31 to 60 of initial home health episode. Source: National Health and Aging Trends Study, 2011 to 2017. *Note:* All proportions are adjusted by survey weights to account for survey design and sampling approach. Only episodes for which an individual was neither admitted to a hospital or hospice within 60 days of the episode start (A) nor died within 60 days of the episode start (B) were included in the analysis.

**Table 1**  
 Characteristics of Individuals Receiving Home Health with and Without Dementia

Characteristic	All	No dementia (69.7%)	Dementia (30.4%)
Sample size	1,867	1,193	674
Age, mean, y	79.2	77.8	82.4**
Female	60.7	61.5	58.9
Race			
White, non-Hispanic	80.9	84.5	72.7**
Black, non-Hispanic	9.0	8.2	11.0*
Hispanic	5.5	4.0	9.1**
High school education or greater	76.5	81.6	64.3**
Medicaid	19.1	15.8	27.0**
Married	43.1	44.8	39.0*
Lives alone	37.6	38.9	34.6
Region			
Northeast	20.4	21.0	18.9*
Midwest	20.8	22.3	17.2
South	43.5	42.6	45.7
West	15.4	14.1	18.3
Lives in metropolitan area	82.5	81.5	84.8**
Clinical and functional characteristics			
No. of impaired activities of daily living			
0 (Independent)	68.2	79.8	41.4**
1–2	16.1	13.3	22.6
3	15.7	7.0	36.0
Homebound	12.5	6.1	27.1**
Self-reports that health is fair or poor	38.8	33.8	50.4
Hospitalized midsequence	14.5	15.4	12.3
Has an unpaid caregiver	91.1	89.4	94.6
No. of chronic conditions			

Characteristic	No dementia (69.7%)		Dementia (30.4%)	
	All			
0	2.8	3.0	2.4	
1-3	42.2	46.3	32.9**	
4	55.0	50.8	64.7**	
Died within 12 mo of sequence start date	18.7	15.0	27.3**	
Average No. of sequences/person	1.4	1.4	1.6**	
Average No. of episodes/sequence	2.0	1.9	2.2*	

*Note:* Data are given as percentage, unless otherwise indicated. Data source: National Health and Aging Trends Study (NHATS) linked to Medicare claims, 2011 to 2017. Activities of daily living include eating, toileting, bathing, dressing, transferring, and walking inside. If an individual had multiple episodes of home health, all measures were taken from the NHATS survey before his/her first observed home health episode.

\*  $P < .05$

\*\*  $P < .01$ .

**Table 2**

## Patient Characteristics Associated with Odds of Community-Initiated Sequence

Characteristics	Odds of community-initiated home health, OR (95% confidence interval)
Probable dementia	1.64 (1.31–2.06)**
Age	1.04 (1.03–1.06)**
Female	1.00 (0.78–1.28)
Race	
White, non-Hispanic	Reference
Black, non-Hispanic	1.47 (1.01–2.14)*
Hispanic	1.97 (0.93–4.20)
High school or greater education	1.12 (0.86–1.45)
Lowest quartile of income	1.00 (0.98–1.01)
Medicaid	2.21 (1.61–3.03)**
Living alone	1.34 (1.00–1.80)*
Married	0.98 (0.72–1.33)
Region	
Northeast	Reference
Midwest	1.66 (1.07–2.56)*
South	2.15 (1.54–3.01)**
West	1.64 (1.01–2.67)*
Lives in metropolitan area	1.17 (0.83–1.66)
No. of impaired activities of daily living:	
0	Reference
1–2	1.53 (1.10–2.13)**
3	2.40 (1.73–3.34)**
No. of chronic conditions	
0	Reference
1–3	1.78 (0.88–3.60)
4	1.78 (0.87–3.63)
Self-reported health = fair/poor	1.10 (0.86–1.41)
Died within 12 mo of sequence start date	0.76 (0.58–0.99)*

*Note:* Data source: National Health and Aging Trends Study linked to Medicare claims, 2011 to 2017. Activities of daily living include eating, toileting, bathing, dressing, transferring, and walking inside.

Abbreviation: OR, odds ratio.

\*  $P < .05$

\*\*  $P < .01$ .