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Feature Article

Homebound older adults: Prevalence, characteristics, health care utilization and quality of care

Shirley Musich, PhD [a,*], Shaohung S. Wang, PhD [a], Kevin Hawkins, PhD [a], Charlotte S. Yeh, MD [b]

[a] Advanced Analytics, Optum, 315 E. Eisenhower Parkway, Suite 305, Ann Arbor, MI 48108, USA
[b] AARP Services, Inc., 601 E. Street, N.W., Washington, D.C. 20049, USA

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ABSTRACT

The purpose of this study was to estimate prevalence rates of homebound older adults, their characteristics and the impact of homebound status on health care utilization, expenditures and quality of medical care measures. Surveys were sent to new enrollees ($n = 25{,}725$) in AARP® Medicare Supplement plans (insured through UnitedHealthcare) to screen for serious chronic conditions, ambulatory disabilities and eligibility for care coordination programs. Health care utilization and expenditures were determined from paid claims. Member-level quality measures considered compliance with medication adherence and care patterns. Among survey respondents, 19.6% were classified as being homebound. The strongest predictors of being homebound included serious memory loss, being older, having more chronic conditions, taking more prescription medications and having multiple hospitalizations. Homebound had significantly higher health care utilization and expenditures. Homebound were more likely to be noncompliant with medication adherence and care pattern rules. Ongoing screening and subsequent interventions for new enrollees classified as homebound may be warranted.

Introduction

Homebound older adults are an understudied population that often lives with functional disabilities, multiple medical comorbidities, depression and cognitive impairment.[1–3] This population, often isolated from emotional and social support,[4] is vulnerable and at significant risk for decreased quality of life, increased medical complications, loss of independent living and mortality.[3–5] Yet homebound older adult populations have received minimal programmatic attention, even as numbers of disabled older adults continue to increase and the demand for home care services continues to grow.[6]

In the US, homebound status is generally defined consistent with Medicare home care benefits. These criteria have become more restrictive over time and currently consider those eligible for benefits according to extent of ambulatory disability (e.g., severe), diagnoses of medical or injury episode and need for intermittent skilled care (e.g., nurse, physical therapist).[7] The Medicare home care benefits program is coordinated by a physician's referral and treatment plan and delivered by Medicare-approved home care agencies. Research studies in the US focused on homebound older adults generally recruit study populations through the agencies delivering home-based services (e.g., Meals on Wheels), but not necessarily using Medicare home care criteria.[4,5,8–13] Consequently, population screening has not been utilized and estimates of prevalence rates for homebound older adults are difficult to determine. Based on 2012 US Census Bureau reports, 23.5% (9.2 million) of 65-year and older adults characterized themselves as having ambulatory disabilities (e.g., difficulty walking or climbing stairs).[14] Medicare only serves about 3 million of these older adults with documented (by the physician) ambulatory disabilities and medical health needs.[6]

In other countries (e.g., Israel, Japan), homebound among older adults (65 years and older) are more generally defined from a screening survey question querying how many times a person leaves the home.[15–17] Responses indicating leaving one time a week or less are defined as being homebound and have been validated as a good predictor of incident disability of physical function.[17] This broader identification of homebound older adults includes those with both physical and mental conditions (e.g., cognitive impairment) that limit one's ability to leave home.[17] Given various levels of restrictions in screening for homebound older adult research studies, the

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* Corresponding author. Tel.: +1 248 626 0082.
E-mail address: shirley.musich@optum.com (S. Musich).

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prevalence of homebound among older adults in these countries has been estimated at about 10%–20% of the population.[15–17]

Characteristics associated with homebound older adults include demographics (e.g., older, female, lower income/education),[4,15,16] poorer health status (e.g., more comorbidities requiring more medications),[13,15,16,18,19] lower functional status (e.g., more ADLs/IADLs, mobility, hearing and vision problems)[5,15,16] and poorer mental health (e.g., depression, loneliness and anxiety).[1,4,13,15,16,20] High levels of depression, anxiety and cognitive impairment lead to higher likelihoods of noncompliance with treatment plans and/or medication adherence.[21,22]

The inability to keep appointments or pursue follow-up care plans with multiple physicians results in fragmented health care delivery[23] and a lack of care coordination across multiple chronic conditions. The consequences of this system are manifested in high utilization of emergency room visits—as high as 68% in low-income homebound older adults.[24] The combination of functional disability with multiple conditions is especially detrimental and leads to elevated use of emergency room visits, hospitalizations and, consequently, higher health care expenditures.[25] Homebound older adults are often among the top 5% of highest utilizers of medical services with persistently high medical expenditures over time.[25]

Home care agencies and programs serving homebound older adults tend to be focused on medical and physical issues[12,18] including delivery of meals (e.g., Meals on Wheels), home-based medical care (e.g., medical services delivered to the home by physicians and/or nurses)[13,18,21] or rehabilitation (e.g., physical therapy, speech therapy, occupational rehabilitation). Few services focus on mental health needs of homebound older adults despite known high levels of depression and anxiety or cognitive impairment.[3,9,12] Intervention programs to address mental health issues are hampered by insufficient clinical resources, functional inability for patients to keep appointments and lack of diagnosis and referral patterns for mental health issues.[1,3]

Most of the literature examining homebound older adults has focused on Medicare populations in the US or older adult populations in other countries. We found no studies investigating the prevalence of homebound and its consequences among older adults with Medicare Supplement plans (i.e., Medigap). While most (about 90%) of those with original fee-for-service Medicare coverage have some type of supplemental insurance coverage, about 28% (currently about 10.2 million adults) have purchased Medigap coverage.[26] Few studies in the US have investigated the prevalence of those with ambulatory disabilities or detailed their characteristics and/or the outcomes associated with these disabilities. To address these gaps in scientific knowledge, considering the steady increase in Baby Boomers aging into Medicare and Medicare Supplement plans, it was of particular of interest to understand the magnitude of disability issues (i.e., prevalence and medical ramifications) among new enrollees to AARP Medicare Supplement plans.

Thus, the primary objective of our study was to document the prevalence of homebound older adults among new enrollees to AARP Medicare Supplement plans and determine characteristics associated with homebound status. The secondary objective was to examine the impact of homebound status on the individual's 1) health care utilization (i.e., inpatient admissions and emergency room visits); 2) medical and prescription drug expenditures; and 3) medication and care pattern compliance (i.e., quality of care measures).

Methods

Sample selection

In 2013, approximately 3.5 million Medicare insureds were covered by an AARP® Medicare Supplement plan insured by UnitedHealthcare Insurance Company (for New York residents, UnitedHealthcare Insurance Company of New York). These plans are offered in all 50 states, Washington DC and various US territories. From January 2012 through December 2014, new enrollees to AARP Medicare Supplement plans in five states (California, Florida, North Carolina, New York and Ohio) were surveyed to screen for at-risk populations with self-reported intensive health needs (e.g., multiple chronic conditions, cognitive impairment, disabilities and multiple hospitalizations). New enrollees during this time period included 1) insureds 65 years and older and 2) disabled insureds 64 years and under qualified for Medicare benefits. To be eligible for this prospective cross-sectional study, survey respondents were required to have a minimum of six months of Medicare Supplement plan eligibility post-survey completion and to be enrolled in an AARP Medicare Rx prescription drug plan. The final study sample included 25,725 survey respondents.

Survey

The short initiation survey (17 questions) was developed and validated in 2005/2006 by UnitedHealthcare to screen insureds for poor health status, cognitive impairment, frailty and probability for repeated admissions. The survey, designed as a single-page questionnaire, was adapted for use in screening new enrollees (with no medical claims history) about current health status and potential eligibility for existing care coordination services. Eligibility for programs was based on responses to selected questions on the survey, including existing chronic conditions, past hospitalizations, cognitive impairment and/or disability status.

Homebound characterized as self-reported ambulatory disability were identified by answering "yes" to any of the questions in Table 1.

These criteria are consistent with Medicare requirements for levels of ambulatory disabilities (i.e., requiring assistive devices or the help of another person to get around outside of one's home) but eligibility for Medicare home care benefits require additional physician-documented medical/injury episodes of care and subsequent intermittent skilled care needs. Our purpose in this study was to consider the broader impact of ambulatory disabilities without the restriction of additional medical needs.

Table 1
Survey questions assessing ambulatory disabilities used to identify homebound older adults.

Homebound disabilities	Eligible new enrollees	Homebound older adults
	25,725 (%)	5043 (%)
Have trouble getting around at home or outside your home?	14.7	74.8
Use a cane, wheelchair or walker to move around at home or outside your home?	13.9	70.7
Need the help of another person to move around inside or outside your home?	5.1	26.1
Need to stay in the house most or all of the time?	4.0	20.5
Need to stay in bed most or all of the time?	2.2	11.0
Total homebound older adults	**19.6%**	**100%**

Survey respondents were considered homebound if they answered yes to any of these five questions.