ELSEVIER

CrossMark

Disability and Health Journal 10 (2017) 48–57

Disability and Health Journal

www.disabilityandhealthjnl.com

Research Paper

Disability stage and receipt of recommended care among elderly medicare beneficiaries

Ling Na, Ph.D.[a], Sean Hennessy, PharmD., Ph.D.[a,b], Hillary R. Bogner, M.D., M.S. C.E.[c], Jibby E. Kurichi, M.P.H.[a], Margaret Stineman, M.D.[a], Joel E. Streim, M.D.[d], Pui L. Kwong, M.P.H.[a], Dawei Xie, Ph.D.[a], and Liliana E. Pezzin, Ph.D., J.D.[e,f,*]

[a]*Center for Clinical Epidemiology and Biostatistics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA*
[b]*Center for Pharmacoepidemiology Research and Training, University of Pennsylvania, Philadelphia, PA, USA*
[c]*Department of Family Medicine and Community Health, University of Pennsylvania, Philadelphia, PA, USA*
[d]*Geriatric Psychiatry Section of the Department of Psychiatry, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, USA*
[e]*Center for Patient Care and Outcomes Research (PCOR), Medical College of Wisconsin, Milwaukee, WI, USA*
[f]*Department of Medicine, Medical College of Wisconsin, Milwaukee, WI, USA*

Abstract

Background: Receipt of recommended care among older adults is generally low. Findings regarding service use among persons with disabilities supports the notion of disparities but provides inconsistent evidence of underuse of recommended care.

Objective: To examine the extent to which receipt of recommended care among older Medicare beneficiaries varies by disability status, using a newly developed staging method to classify individuals according to disability.

Methods: In a cohort study, we included community-dwelling Medicare beneficiaries aged 65 and older who participated in the Medicare Current Beneficiary Survey between 2001 and 2008. Logistic regression modeling assessed the association of receiving recommended care on 38 indicators across different activity limitation stages.

Results: Nearly one out of every three elderly Medicare beneficiaries did not receive overall recommended care. Adjusted odds ratios (ORs) revealed a decrease in use of recommended care with increasing activity limitation stage. For instance, ORs (95% CIs) across mild, moderate, severe and complete limitation stages (stages I–IV) compared to no limitation (stage 0) in ADLs were 0.99 (0.94–1.05), 0.89 (0.83–0.95), 0.81 (0.75–0.89) and 0.56 (0.46–0.68). Disparities in receipt of recommended care by disability stage were most marked for care related to post-hospitalization follow-up and, to a lesser degree, care of chronic conditions and preventive care.

Conclusions: Elderly beneficiaries at higher activity limitation stages experienced substantial disparities in receipt of recommended care. Tailored interventions may be needed to reduce disparities in receipt of recommended medical care in this population.

Keywords: Disability; Activity limitation stages; Medicare; Receipt of recommended care; Health care quality

Persons with disabilities are increasingly recognized as vulnerable to disparities in health and health care. Findings from the Healthy People 2020 initiative indicate that persons with physical or cognitive disabilities experience difficulties or delays in getting needed health care.[1] In its most recent Health Disparities and Inequalities report, the Centers for Disease Control and Prevention (CDC) identified disability as an "at risk" demographic characteristic that should be described in ongoing population surveillance for health disparities.[2] In 2011, the Agency for Healthcare Research and Quality (AHRQ) designated people with disabilities as a priority population, calling for "major efforts to understand and close the quality gap."[3]

Despite the increasing recognition that persons with disabilities are vulnerable to health care disparities, the literature on patterns of service use among persons with disabilities has provided inconsistent evidence of underuse. Earlier studies suggested that disability, defined in a

Disclosures: The research for this manuscript was supported by a grant from the National Institutes of Health (R01HD074756). There are no personal conflicts of interest of any of the authors, and no authors reported disclosures beyond the funding source. The opinions and conclusions of the authors are not necessarily those of the sponsoring agency. We certify that no party having a direct interest in the results of the research supporting this article has or will confer a benefit on us or on any organization with which we are associated. This material has not been previously presented at a meeting.

* Corresponding author. Medical College of Wisconsin, PCOR and Department of Medicine, 8701 Watertown Plank Road, Milwaukee, WI, 53226, USA.

E-mail address: lpezzin@mcw.edu (L.E. Pezzin).

1936-6574/$ - see front matter
http://dx.doi.org/10.1016/j.dhjo.2016.09.007

number of ways, was a risk factor for underuse of certain preventive care services, such as mammography,[4] pap tests,[4] and fecal occult blood tests,[5] but not for pneumococcal vaccination.[4] The trajectory of disability was also found to influence receipt of recommended care, and the pattern varied across specific quality indicators.[6] Persons becoming more highly disabled, for example, were more likely to attend an annual doctor's visit and receive recommended care for angina, but less likely to receive recommended care for diabetes, breast cancer, and eye health. While these results may reflect true variation in provision of care by disability, we speculate that the lack of systematic patterns reported in previous studies may be an artifact of the methods used to classify disability, which in these studies relied solely on counts of activity limitations.[6]

In this study, we sought to apply a recently developed and validated International Classification of Functioning, Disability and Health (ICF)-based approach that characterizes activity limitation stages of basic and instrumental activities of daily living (ADLs and IADLs). The approach to disability measurement was used to examine the provision of recommended care to elderly Medicare beneficiaries at various activity limitation stages.[7] Stages of ADLs and IADLs were derived to describe specific patterns of ADL and IADL limitations, recognizing that even for people with the same number of limitations, an understanding of the qualitative differences associated with each pattern might improve the tailoring of care. In these staging systems, individuals are classified hierarchically from stage 0 to stage IV, with higher stages generally indicating more severe functional loss. Stage III was designed as a non-fitting stage to accommodate atypical patterns of activity limitations.

Receipt of recommended care was based on the underuse monitoring system approach established by Asch and colleagues[8] among elderly Medicare beneficiaries, and modified by Chan et al.[6] for those with disabilities–a clinically valid, comprehensive, and well-tested approach. We focused on indicators of recommended care that span several processes of care, including prevention, initial evaluation, diagnostic tests, therapeutic interventions, follow-up, and monitoring for acute, chronic, medical, and surgical conditions. Documenting variations in (under)use of these medical services as a function of activity limitation stage is paramount to properly addressing health needs, to reducing disparities, as well as preventing excess morbidity and premature death among persons with disabilities.

Conceptual framework

A number of factors might place persons with disabilities at higher risk of reduced access to recommended health care services. Compared to those without disabilities, disabled elderly persons are more likely to be ethnic minorities,[9] have lower incomes, and poorer overall health.[10] While having greater healthcare needs, persons with disabilities also face greater environmental and physical barriers to care (e.g., difficulty organizing or travelling to healthcare) than those without any such limitations.[11,12] Finally, older adults with functional limitations are more likely than those without such limitations to report dissatisfaction with care coordination and with access to medical care.[13] Based on these findings, our underlying conceptual framework postulates that, as the burden of disability increases, a person's ability to access timely and coordinated health care decreases, resulting in reduced receipt of recommended care among persons with disabilities. Specifically, we hypothesize that persons with disability will be less likely to receive recommended care across all domains (acute, chronic, preventive, and diagnostic-related care). We further hypothesize that a higher activity limitation stage is associated with lower likelihood of receipt of recommended care (with the possible exception of non-fitting stage III).

Methods

Data sources and study population

We used data from the Medicare Current Beneficiary Survey (MCBS), a nationally representative, rotating longitudinal panel survey of Medicare beneficiaries.[14] Survey participants are interviewed three times per year for four consecutive years, and provide self- or proxy-reported information on sociodemographic characteristics, health and functioning, access to care, and satisfaction with care. The survey sample is replenished annually with newly eligible beneficiaries. Survey data are linked to beneficiaries' Medicare claims data, from which information on health services utilization is readily available. For each survey respondent, inpatient, outpatient, and non-institutional claims data are available for three consecutive years, starting on the first calendar day of the year following the initial survey wave.

Our sample was comprised of elderly (65 + years old) community-dwelling beneficiaries who participated in the MCBS from 2001 to 2008. Individuals were excluded from the assessment of a given indicator if they did not have enough follow-up time for that indicator, died during the follow-up period, were not enrolled in Medicare Parts A or B, or were enrolled in an HMO during the follow-up period.

Activity limitation stages

Using a validated algorithm,[7] we classified all beneficiaries hierarchically, based on the nature and severity of their disability, into one of five possible activity limitation stages: stage 0 (no limitation), stage I (mild limitation), stage II (moderate limitation), stage III (severe limitation), and stage IV (complete limitation). ADL and IADL stages were determined by respondents' self- or proxy-reported ability to perform without difficulty each of the six ADL