ACL Administration for Community Living

IssueBRIEF

AoA Administration on Aging

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Older Americans Act Title III-C Nutrition Services Program: **Examining Adverse Health Events Preceding Entry to the Home-Delivered Meal Program**

BACKGROUND

The Older Americans Act Title III-C Nutrition Services Program (NSP) is the largest program in the United States that provides prepared meals to older adults in need. Overseen by the Administration on Aging (AoA) within the Administration for Community Living of the U.S. Department of Health and Human Services (DHHS), the NSP strives to promote the health and well-being of and reduce hunger and food insecurity among older adults by providing congregate and home-delivered meals, nutrition education, nutrition-risk screening, and nutrition counseling.

Although studies have examined NSP participants' health outcomes, little is known about whether changes in older adults' health precipitate program entry. Older adults who experience an adverse health event such as a hospitalization might learn about the NSP, particularly the availability of home-delivered meals, through hospital discharge planners or social workers. To provide patients with the most effective hospital-to-home transition program, health care administrators and practitioners can link patients to home and community-based services as part of a broader array of long-term care. This can help maximize the chances of a successful recovery and decrease the likelihood of hospital readmission, particularly for rehospitalizations that occur soon after discharge.

The scarcity of research on how changes in older adults' health correspond to starting to receive home-delivered meals might be due to the lack of comprehensive, longitudinal data required to assess health events and changes in NSP participation over time. To address this gap, the research team combined self-reported information identifying when older adults entered the NSP, survey data describing their personal characteristics and circumstances, and longitudinal Medicare administrative records indicating the types and timing of health events they experienced.

This issue brief assesses the types and prevalence of adverse health events experienced by new home-delivered meal participants; the timing of these events relative to starting to receive home-delivered meals; and how these events varied by participants' characteristics. These findings can help the AoA, local program administrators, and policymakers better understand the types of health events that can lead to homebound status among older adults, often resulting in their participation in the home-delivered meal program. Therefore, the findings could help to better understand the specific needs of new home-delivered meal participants.[1]

METHODS

The data used in the analysis were collected as part of the Title III-C NSP Evaluation, which Mathematica conducted for AoA (Mabli et al. 2017, 2018). To estimate the effect of receiving a congregate or home-delivered meal on a range of outcomes, including food security, health, and health care use, the study team compared outcomes for participants and a matched comparison group of program-eligible nonparticipants using data collected in surveys conducted in 2015 to 2017, as

[1] People who are homebound because of disability, illness, or isolation and are ages 60 and older are eligible for home-delivered meals.

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well as Medicare claims and enrollment data obtained through the Centers for Medicare & Medicaid Services (CMS) Research Data Assistance Center. Because the evaluation report found that home-delivered meal participants were more likely than congregate meal participants to experience health events, this issue brief focuses on pre-program health events experienced by home-delivered meal participants only.

The outcomes survey asked participants how long ago they first received a home-delivered meal. Based on their responses and the dates of their interviews, the study team estimated the calendar month and year of program entry using actual dates if the response was in days or weeks or using calendar months if the response was in months or years. Because Medicare claims data were available starting in January 2015 and the first survey interview occurred in October 2015, the study team had to limit the analysis to home-delivered meal participants who had recently entered the program to have a sufficient number of months during which to assess the occurrence of health events. For analyses of health events over a three-month period before and including the month of program entry, the study team restricted the original evaluation sample of 310 home-delivered meal participants with Medicare claims to the 84 participants who entered the program in April 2015 or later. Similarly, for analyses of health events over a six-month period before the month of program entry, the study team restricted the sample to 42 participants who entered the program in July 2015 or later.[2] Because these sample sizes are smaller than the size of the original evaluation sample, these analyses should be considered exploratory.

The analysis also compared the prevalence of adverse health events to other groups of older adults. It includes 169 ongoing participants who reported receiving their first home-delivered meal at least one year before their baseline interview and 255 nonparticipants who reported that they had not participated in the NSP in the year before or after their baseline interview. For ongoing participants and nonparticipants, the team analyzed health events in the three months leading up to and including their baseline survey month.

The outcomes analyzed include whether the individual experienced adverse health events in a three- or six-month window before program entry (new participants) or before their baseline survey interview (ongoing participants and nonparticipants). The following adverse health events were examined: hospital admission, emergency department visit, home health episode, and admission to a skilled nursing facility (SNF). Medicare home health episodes cover 60-day periods and involve at least one or a mix of the following services for homebound patients: skilled nursing care; physical, speech, or occupational therapy; home health aide; and medical social services.

FINDINGS

Incidence of adverse health events before program entry

Most new home-delivered meal participants experienced an adverse health event in the three months before program entry (Table 1). About one-third (31 percent) of program entrants had a home health episode during this period, 24 percent had an emergency department visit, and 22 percent had a hospital admission.

The incidence of any adverse health event was greater for new participants (53 percent) in the three months before receiving home-delivered meals than for ongoing participants (42 percent) and nonparticipants (22 percent) in the three months before the baseline interview (Table 1). This was especially true for inpatient hospital admissions, experienced by 22 percent of new participants compared to 10 and 2 percent of ongoing participants and nonparticipants, respectively. Home health episodes were also more common (31 percent for participants versus 27 percent for ongoing participants and 6 percent for nonparticipants). Although a small share of each group (less than 3 percent) were admitted to a SNF, the incidence was greatest for new participants (3 percent) compared to ongoing participants and nonparticipants (1 and 0 percent, respectively).[3]

The incidence and types of adverse health events experienced in the three months before program entry for the 84 people in the first column of Table 1 differed according to participants' living arrangement, geography, and income. New participants who lived alone were more likely to have experienced any adverse health event in the three months before entry than those who lived with others (61 versus 43 percent) (Table 2). In particular, new participants who lived alone were more likely

[2] Because Medicare claims are not available for beneficiaries enrolled in managed care plans such as Medicare Advantage, the analysis also required participants to be enrolled in fee-for-service Medicare (known as Original Medicare).

[3] Medicare-covered SNF stays are typically no longer than two to three weeks' duration. It is likely, though not certain, that meal participation began after SNF discharge to home.

TABLE 1: Percentage of older adults experiencing adverse health events in the three months before program entry or baseline survey interview

	Experienced event in three months before entry or baseline interview		
Health event	**New participants**	**Ongoing participants**	**Non-participants**
Inpatient hospital admission	22.3	10.4	1.7
Emergency department visit	23.8	21.5	17.3
Home health episode	31.3	26.5	6.3
Skilled nursing facility admission	2.6	1.1	0.0
Any adverse health event	53.1	41.7	22.3
Sample size	**84**	**169**	**255**

Source: Medicare claims and enrollment data matched to AoA NSP outcomes survey, 2015–2016, weighted data.
Note: All units are percentages of the indicated sample.
Tabulations are based on unweighted sample sizes of 508 home-delivered meal participants and non-participants.

to experience a home health episode compared to those who lived with others (36 versus 25 percent). The majority (59 percent) of new participants living in urban households experienced an adverse health event shortly before participating in the program, compared to less than half (38 percent) of those living in rural areas. The urban and rural subgroups differed largely in hospital admissions and emergency department visits (28 versus 8 percent, and 30 versus 6 percent, respectively). Individuals in lower-income households, defined as having income below 122 percent of the DHHS federal poverty guidelines, were several times more likely to have experienced an emergency department visit than those living in higher-income households (41 versus 5 percent), but overall had a smaller difference in experiencing any adverse health event (57 versus 49 percent).

TABLE 2: Percentage of older adults experiencing adverse health events in the three months before program entry, by subgroup

	Experienced event in three months before entry					
Health event	**Individuals who live alone**	**Individuals who live with other family members**	**Individuals who live in an urban area**	**Individuals who live in a rural area**	**Individuals in lower-income households**	**Individuals in higher-income households**
Inpatient hospital admission	23.3	21.1	27.7	7.6	22.9	21.7
Emergency department visit	26.9	19.7	30.3	5.7	40.6	4.8
Home health episode	36.4	24.5	30.7	32.9	34.5	27.7
Skilled nursing facility admission	2.5	2.9	2.7	2.5	3.1	2.1
Any adverse health event	60.6	43.3	58.5	38.2	57.3	48.5
Sample size	**42**	**42**	**47**	**37**	**41**	**43**

Source: Medicare claims and enrollment data matched to AoA NSP outcomes survey, 2015–2016, weighted data.
Note: All units are percentages of the indicated sample.
Tabulations are based on unweighted sample sizes of 84 new home-delivered meal participants.

Incidence of adverse health events in the six months before program entry

Although the analysis of the incidence of adverse health events using a three-month observation period yields a larger number of participants in the sample, it precludes examining when these events occur relative to starting to receive home-delivered meals. Over the six-month period before program entry, a greater percentage of new participants experienced an adverse health event in the month immediately preceding program entry than in any other month (Table 3). One-third (33 percent) of program entrants experienced any adverse health event in the month before program entry, compared to 20 to 24 percent in earlier months.

Inpatient hospital admissions were the most common adverse health event in the month before entry (19 percent), and spiked in the month before program entry compared to the five previous months. Emergency department visits and admissions to skilled nursing facilities were also most common in the one to two months before entry. In contrast, the incidence of home health episodes was consistently high in all periods before entry (11 percent or more in all months), peaking at 19 percent four to five months before entry and falling slightly in the months leading up to entry.

DISCUSSION

Many NSP participants started receiving home-delivered meals after experiencing an adverse health event, such as a hospital admission, emergency department visit, or home health episode. Those who began receiving home-delivered meals were almost two-and-a-half times more likely to have experienced an adverse health event than those who remained nonparticipants. Furthermore, the use of health care spiked before program entry. Emergency department visits and hospital admissions were not frequent until about two months before program entry. An adverse health event in the month before entry is likely to have been a trigger event leading to homebound status and entry into a home-delivered meal program for one-third of new participants. Alternatively, a hospital admission or emergency department visit might, for some beneficiaries, be a conduit for information about home-delivered meals programs, leading to enrollment at some point after discharge. In addition, 10 to 20 percent of new entrants experienced a home health episode in all six months before program entry, suggesting that continuing physical limitations, as opposed to a sudden acute event, could also precede entry into the program. It is possible that survey respondents applied for meal delivery before the adverse health event for other reasons but did not begin to receive meals until later, after the health event itself. It seems more plausible, however, that meal provision was initiated as part of a clinical planning process associated with receipt of health care.

TABLE 3:
Six month history of adverse health events before program entry

	Experienced event in month before entry (t)					
Health event	**t-6**	**t-5**	**t-4**	**t-3**	**t-2**	**t-1**
Inpatient hospital admission	0.0	1.0	3.2	2.0	3.5	18.8
Emergency department visit	11.6	0.5	8.4	3.2	15.3	8.2
Home health episode	11.6	18.6	19.0	16.8	14.3	13.5
Skilled nursing facility admission	0.0	1.0	0.8	1.3	2.0	1.7
Any adverse health event	23.2	20.1	24.1	22.1	22.0	33.2
Sample size	**57**	**59**	**59**	**61**	**60**	**61**

Source: Medicare claims and enrollment data matched to AoA NSP outcomes survey, 2015–2016, weighted data.
Note: All units are percentages of the indicated sample.
Tabulations are based on unweighted sample sizes of 84 new home-delivered meal participants.

The differences in health care use before entry according to older adults' characteristics showed some clear patterns. The observed differences suggest that for entrants into the home-delivered meal program, an adverse health event among those living alone, those living in an urban area, and those who have less income more frequently precedes program entry. Limited availability of caregivers and resource constraints among specific groups of older adults could, in turn, drive these patterns. Some of these differences, such as the large observed differences in use of the emergency department by income and urbanicity, could also arise from a combination of other factors, such as poorer health and lack of a regular care provider among lower-income households, and easier access to emergency care in urban areas.

This study is the first to pair a nationally representative sample of home-delivered meal participants with administrative data to examine the health events experienced by new and ongoing participants. Its findings should be interpreted in the context of several limitations. First, date of entry into the program is determined by self-reported survey data, which may be affected by recall bias. Although there are clear differences in the incidence of health events between new and ongoing participants, the exact timing of events may be obscured by this bias. Second, because events in older adults' lives such as losing a caretaker or experiencing a decrease in income may precipitate both adverse health events and need for home-delivered meals, the findings presented in this brief represent an association between health events and program entry, rather than a causal relationship. Finally, this brief examines the events that precede program entry, but does not examine the effect of participation on the likelihood of experiencing subsequent health events. An assessment of these types of program effects on health events and healthcare utilization can be found in a recent evaluation report (Mabli et al. 2018).

The findings in this brief underscore the importance of practitioners promoting awareness of the NSP to older adults experiencing adverse health events. Health care providers, particularly those in hospitals and emergency departments and home health staff, are in a favorable position to provide information about the NSP and should be recognized as prospective entry points into the program. In addition to receiving nutritious meals, home-delivered meal participants can interact with meal delivery drivers and other volunteers, and receive nutrition education, screening, and counseling as well as other services that promote health and prevent disease. To provide patients with the most effective transitions from hospital, skilled nursing facilities, or other rehabilitation facilities to home, practitioners could inform patients of the broad array of services available through the NSP. They can also explain how the NSP provides homebound participants with a primary access point for many home- and community-based services to help meet their health and nutrition needs.

Practitioners and administrators in the Aging Network should learn more about the process through which older adults who experience adverse health events come to participate in the NSP. Identifying best practices among healthcare providers in referring older adults who experience these events to the NSP could strengthen partnerships among agencies and lead to a stronger continuum of care model. This could also help to bolster referrals in areas in which older adults who experience these events currently are not being referred to the NSP.

REFERENCES

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