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Providing More Home-Delivered Meals Is One Way To Keep Older Adults With Low Care Needs Out Of Nursing Homes

Kali S. Thomas^{1,*} [assistant professor] and Vincent Mor² [professor of health services, policy, and practice]

¹ Center for Gerontology and Healthcare Research, Brown University, and a health research science specialist at the Providence Veterans Affairs Medical Center, both in Providence, Rhode Island. ² School of Public Health, Brown University, and senior health scientist at the Providence Veterans Affairs Medical Center.

Abstract

Programs that help older adults live independently in the community can also deliver net savings to states on the costs of long-term supports and services. We estimate that if all states had increased by 1 percent the number of adults age sixty-five or older who received home-delivered meals in 2009 under Title III of the Older Americans Act, total annual savings to states' Medicaid programs could have exceeded \$109 million. The projected savings primarily reflect decreased Medicaid spending for an estimated 1,722 older adults with low-care needs who would no longer require nursing home care— instead, they could remain at home, sustained by home-delivered meals. Twenty-six states could have realized net savings in 2009 from the expansion of their home-delivered meals programs, while twenty-two states would have incurred net costs. Programs such as home-delivered meals have the potential to provide substantial savings to some states' Medicaid programs.

The home-delivered meals program offered through Title III-C2 of the Older Americans Act of 1965 is the largest program to be funded by the act. In 2011 it served 137.1 million meals to more than 846,000 participants.(1)

The major goals of the program, known to many as “Meals on Wheels,” are to address food insecurity (that is, difficulty in obtaining nutritionally adequate and safe food because of a lack of resources), encourage socialization, and promote the health and well-being of older people through nutrition and nutrition-related services. All people age sixty or older are eligible for home-delivered nutrition services, although the Older Americans Act gives priority to serving those with the greatest economic and social needs, with particular attention to low-income older people who are members of a minority group.

The home-delivered meals program serves a vulnerable population. A 2009 survey of recipients found that 70 percent were age seventy-five or older, 56 percent lived alone, 25 percent had an annual income of \$10,000 or less, and 59 percent reported that the home-

* Corresponding author (kali_thomas@brown.edu).

delivered meals program provided at least one-half of their daily food intake.(2) The same survey found that four out of ten recipients reported needing help with one or more of the five core activities of daily living (bathing, dressing, eating, using the toilet, and transferring into or out of bed or a chair). Eighty-five percent reported needing help with one or more of the instrumental activities of daily living (for example, doing light housework, taking medications, managing money, and shopping for groceries).

Funding for home-delivered meals comes from federal funds and state-matched dollars, other public funds (from a state, city, or county), clients' contributions, donations, and in-kind contributions. The [Administration for Community Living] (formerly the Administration on Aging) administers federal grants for home-delivered meals and allocates them to states and US territories according to a formula based on the state or territory's share of the US population age sixty or over.

There is substantial financial support for the home-delivered meals program from the private sector as well as from state and local governments. Although clients are not charged a fee, they are encouraged to contribute through volunteering and financial donations to help defray the cost of services. In 2011 expenditures on home-delivered meals in the fifty states and Washington, D.C., totaled more than \$769 million.(3)

Given the current budgetary environment and the fact that 31.5 percent of Medicaid's \$400 billion in annual combined federal and state spending goes to long-term care for the elderly and the disabled,(4) interest in reducing spending on long-term institutional care is only going to grow. One potential solution is to encourage targeted spending on specific programs that make it possible for older adults to remain in their homes.

Our previous work found that states' increased expenditures on home-delivered meals was associated with a decrease in the proportion of residents with low-care needs in nursing homes.(5) Low-care nursing home residents are those who neither require assistance with the five core activities of daily living nor fall into the Clinically Complex or Extensive Rehabilitation Resource Utilization Groups.(6) Therefore, we assumed that these residents' needs might be met in the community instead of in a nursing home.

In this article we revisit and expand on our previous work to explore the following two additional policy-related questions. First, how many additional clients would need to be served by a home-delivered meals program to decrease the population of low-care residents in nursing homes? And second, what savings might states realize if they increased the number of clients receiving home-delivered meals? Because state and federal policies vary, we projected savings and costs under alternative scenarios.

Study Data And Methods

Data

Data on the number of clients for home-delivered meals and Title III-C2 expenditures came from the State Program Reports for the period 2005–09, which we downloaded from the AGing Integrated Database (AGID).(1)

We matched these data with an internal file of LTCFocUS.org, which is part of the Shaping Long-Term Care in America Project conducted at the Brown University Center for Gerontology and Healthcare Research and which is supported, in part, by the National Institute on Aging.(7) This data set combines variables from the Online Survey Certification and Reporting (OSCAR) databases (which contain administrative data collected by state survey agencies during annual inspections of nursing facilities required for certification), the national Minimum Data Set (resident-level data related to the clinical and functional status of nursing home residents), and the Area Resource Files of the Health Resources and Services Administration (a national health resources database that contains county-level information about health professionals and facilities).

Medicare 2009 enrollment records were used to determine simultaneous enrollment in Medicare and Medicaid (a status known as *dual eligibility*) of low-care residents in nursing homes during 2009.

Measures

Using methods consistent with those in previous studies,(5,8-10) we estimated the percentage of low-care residents based on classifications in the Resource Utilization Groups and residents' limitations in activities of daily living. Data were then aggregated to the facility level to derive prevalence estimates of low-care residents in each facility on the first Thursday in April of each year in the study period.

We acknowledge that our prevalence measure is predicated on the validity of the functional assessment data in the Minimum Data Set. It is possible that residents who do not require skilled clinical services or assistance in activities of daily living nonetheless might not be able to live in the community. In addition, our measure might have missed people whose needs for assistance could be met in the community with services in addition to home-delivered meals.

Our main independent variable—the most important technical difference between the present study and our prior work—was the number of clients receiving home-delivered meals adjusted for the state population ages sixty-five and older. Our previous work examined overall state spending on the home-delivered meals program.(5) However, because the components of these costs vary across providers and states, we decided to use a more concrete figure in this study to examine how expanding services by providing more meals to older adults (instead of simply increasing expenditures) would be related to the decrease in low-care residents of nursing homes.

We standardized the number of recipients of home-delivered meals in each state by the number of older adults ages sixty-five and older. Our use of this population provided a clean and convenient denominator for our measure of use of the home-delivered meals. Using this figure instead of the number of older adults ages sixty and older—the group originally intended to benefit from the meals program created by the Older Americans Act—is a potential limitation. However, we believe this adjustment is appropriate because it captures the vast majority of clients of home-delivered meals (91 percent of people who receive home-delivered meals are older than sixty-five)(2) and because the adjustment has been

used elsewhere to present data on programs of the Older Americans Act.(5,11) Unfortunately, there are no solid longitudinal data on the number of homebound elderly people per state, which would provide the most accurate estimates.

Analyses

We controlled for facility characteristics, market characteristics, state spending on Medicaid home and community-based services, and time. We used the coefficient generated from our statistical analysis to estimate the savings that states could realize on Medicaid spending by increasing the number of clients receiving home-delivered meals. See the online Appendix for a complete description of our analysis, including details about our model and the factors we controlled for.(12)

The results from our model suggested that a 1 percent increase in the proportion of adults ages 65 and older who received home-delivered meals in a state was associated with a decrease in the state's low-care nursing home population of 0.2 percent (for the complete table of results, see Appendix Exhibit A1).(12) Using the Medicare enrollment reports to indicate low-care residents' dual eligibility, we estimated what the decrease in the population of low-care dually eligible residents would be in 2009, were each state to increase its proportion of clients receiving services by 1 percent.

We then translated this reduction in dually eligible residents into Medicaid savings, using the state-specific average nursing home Medicaid daily payment rate in 2009 obtained via a survey of state Medicaid officials.(13) The daily rate represents only those allowable costs recognized by the state Medicaid agency as directly or indirectly related to patient care.

We calculated the spending that would be necessary to provide meals to an extra 1 percent of the population ages sixty-five and older using the average Title III-C2 spending per client in each state reported in the AGID for 2009.(1) Next we calculated the savings or added costs by state.

To offer alternative scenarios of the financial implications of expanding home-delivered meals, we undertook a number of sensitivity analyses. One alternative was using people ages seventy-five and older instead of people ages sixty-five and older. Another was applying the reduction in low-care cases to the 2005 number of nursing home residents instead of to the 2009 number.

Limitations

A shortcoming associated with the model we used to make these projections is that it assumed that the unobservable heterogeneity was relatively constant over time. If instead that heterogeneity changed over time, our empirical results might reflect an association instead of a causal relationship. Because we could not test the change over time in the heterogeneity, our estimates should be interpreted with caution.

Furthermore, our estimates of the impact of reducing the number of low-care residents were made in the context of a strong trend of falling rates of such residents in US nursing homes in virtually all states. In states where these rates have fallen less rapidly than elsewhere, we

may have underestimated the savings; conversely, we may have overestimated them in states whose rates have fallen more rapidly.

Study Results

In 2009 approximately 3 percent of adults ages sixty-five and older received home-delivered meals (see Appendix Exhibit A2).(12) The results ranged from less than 1 percent in Maryland to 8 percent in Wyoming. Also in 2009 approximately 13 percent of nursing home residents were classified as low-care (see Appendix Exhibit A3).(12) These results ranged from 1 percent in Maine to 28 percent in Illinois.

Approximately 83 percent of low-care residents in nursing homes in 2009 were dual eligibles (see Appendix Exhibit A4).(12) The range here was from 54 percent in Iowa to almost 99 percent in New Jersey.

We found that if every state were to provide home-delivered meals to an additional 1 percent of its population of adults ages sixty-five and older, the number of new clients served would total 392,594. In some states the number of clients would increase by less than 1,000, but in others it would increase by more than 5,000 (Exhibit 1). The state that would have the fewest new clients was Wyoming, with an increase of 669; the state that would have the most was California, with 41,481 new clients (Appendix Exhibit A5).(12)

At the same time, the number of low-care, dually eligible people ages sixty-five and older residing in nursing homes would be reduced by 1,722—ranging from 3 people in Wyoming to 137 in New York (see Appendix Exhibit A5).(12) The initial savings to state Medicaid programs would exceed \$109 million for the country as a whole, with ten states saving more than \$3,000,000 annually and half of the states saving at least \$1,000,000 (Exhibit 2). Wyoming would save the least (\$173,196) and New York the most (\$11,427,143) (see Appendix Exhibit A5).(12) .

Twelve states would have to pay more than an additional \$3,000,000 annually in Title III-C2 expenditures for the home-delivered meals for the additional 1 percent of the population ages sixty-five and older (Exhibit 3). The extra costs would range from \$139,563 in Wyoming to almost \$18 million in California, for a total of \$117,568,707 nationwide (see Appendix Exhibit A5).(12)

In twenty-six states there would be annual savings to the state and federal governments under this scenario, while twenty-two states would incur additional costs (Exhibit 4). Pennsylvania would save the most (\$5,728,849), and Florida would spend the most (\$11,472,019) (see Appendix Exhibit A5).(12)

Using a different denominator (the population ages seventy-five and older), we found that if states were to increase the proportion of people receiving home-delivered meals, twenty-four states instead of twenty-six would realize savings (see Appendix Exhibit A6).(12) Pennsylvania would still save the most (\$2,393,664), and Florida would still spend the most (\$5,664,080). However, if Florida and California—the two states with the largest

populations of older adults ages 75 and older—were excluded from these analyses, the remaining forty-six states collectively would save \$1,968,229.

Because there was a linear decline in the population of low-care residents of nursing homes during the study period, we estimated what the effect of expanding the program would have been if states had done so in 2005—when the population of low-care residents was larger. We found that an increase of 1 percent in the number of people receiving home-delivered meals in 2005 would have meant savings for thirty-three states (see Appendix Exhibit A7). (12) In that scenario New York would have saved the most (\$7,599,170), and Florida would have spent the most (\$10,199,493). The total US savings would have been \$6,386,109.

Discussion

Our findings suggest that providing home-delivered meals to older adults may be one way to keep people in the community and out of the nursing home. This research is in line with reports of participants in the home-delivered meals program: More than 92 percent of the participants say that the meals enabled them to continue living in their own homes.(14)

Home-delivered meals may well provide more than just nutritious food to clients. They also are believed to provide dignity and independence and to improve the quality of life for many homebound senior citizens. It is important for policy makers and state officials to recognize both the importance of investing in this relatively affordable program and its potential to save federal and state dollars that would otherwise be spent on institutional care.

We are not assuming that all new recipients of home-delivered meals would be able to avoid entering nursing homes. It is likely that a number of new recipients face a wide array of challenges that could potentially lead to their move to a nursing home. However, providing home-delivered meals may be one mechanism for keeping older adults in the community or at least delaying their entry into nursing homes. In either case, the result would be a decline in the number of people in facilities who could be readily maintained in the community.

Evidence Of Savings

The current results are consistent with those of a prior study that examined spending on home-delivered meals.(5) In addition, these results support the conclusions of that study by replicating its findings using an independent variable that captured the population served, not just aggregate spending. By calculating the Medicaid dollars that could be saved, we provide evidence to support the earlier study's finding that the Older Americans Act program of home-delivered meals is capable of saving the states money.

Specifically, our analyses suggest that twenty-six states with high Medicaid nursing home per diem reimbursement rates, a large proportion of low-care dual eligibles, and a relatively small population of older adults could save money by increasing the number of older adults who received home-delivered meals by 1 percent. In contrast, our analyses suggest that in states with a large population of older adults (such as California and Florida) the change would cost more than any savings that would be realized. However, it is likely the twenty-two states that might not see immediate savings would realize savings in the future.

Our projections of savings rely on a number of assumptions. Thus, it is ultimately more important to consider the direction and relative magnitude of our findings instead of focusing on the precise estimates. Nonetheless, we believe our estimates of savings are very conservative, particularly because the expansion of the home-delivered meals program would be targeted to people in need, as the Older Americans Act requires.

There is another reason why we believe that the estimates of savings are conservative: The number of low-care dual eligibles who we projected would not have to be in nursing homes came from our prevalence estimate of low-care residents. There are likely to be additional residents who cycle in and out of nursing homes and meet the low-care criteria, but who were not captured in our prevalence estimate. Our projected savings also did not account for the likelihood that low-care residents who are not currently eligible for both Medicare and Medicaid will “spend down” their assets while in the nursing home—which means that their costs will eventually be assumed by Medicaid.(15,16)

It is important to note that providing home-delivered meals would not reduce all medical costs. Instead, our model suggests that state savings would come from a reduction in the prevalence of dually eligible low-care residents in nursing homes. Therefore, our projected savings reflect only those for Medicaid-funded nursing home care.

The initial savings realized by states might be relatively small because of the accompanying increase in costs for home-delivered meals. However, we believe that overall savings would increase over time, as people spent longer in the community receiving meals instead of being in nursing homes. It is outside the scope of this project to make long-term predictions about cost savings—which in any case might be unreliable. Nonetheless, our data are robust and suggest that even a broad, nontargeted expansion of the home-delivered meals program is likely to result in initial savings for more than half of the states.

We are not proposing that policy makers consider an expansion as large as the one we investigated. Instead, we believe the 1 percent increase could be used as a model to assess the savings that could be achieved by increasing the number of people receiving home-delivered meals. What we believe to be most important is that states’ savings will increase as the number of low-care cases they avoid increases.

Unmet Need

A 2011 Government Accountability Office report found that 9 percent of low-income older adults received home-delivered meals through the Older Americans Act, and that many more people probably needed the meals because of financial constraints or other difficulties. (11) Roughly 89 percent of low-income older adults who were considered to experience food insecurity and almost 90 percent of older people who were limited in two or more activities of daily living were not receiving home-delivered meals.

Clearly, there is an unmet need, and investments in home-delivered meals could reduce the possibility that these vulnerable older adults will be placed permanently in a nursing home. This documented unmet need warrants increasing the proportion of people receiving meals and justifies additional spending on this program.

Improvements In Quality Of Life

Beyond providing savings to states, home-delivered meals are believed to improve the quality of life of older adults. Recipients of the meals report that the meals are essential to maintaining their independence (92 percent said that the meals enabled them to continue living in their homes), and they express a high level of satisfaction with the meals (90 percent rated the service as good to excellent).(17)

In addition to preventing the unnecessary placement of people in nursing homes, the meals may help increase older adults' independence, encourage autonomy], and thereby improve the recipients' quality of life. Many of these older adults live in isolation, and anecdotal reports suggest that the drivers (both paid staff and volunteers) who deliver the meals are often the only people these older adults see and interact with on a regular basis. In such circumstances, the drivers may serve an important function by regularly monitoring the conditions and well-being of their clients.

Future research is needed to quantify the improvement in recipients' quality of life that results from receiving home-delivered meals. Such an examination should measure the potential gain in quality-adjusted life-years from receiving the meals, which might help make the case for increases in the program's funding.

Capacity

An investigation into expanding the program's capacity to provide more meals would have to precede any decision to expand the program. If states were to encourage targeted expansion by providing meals to older Americans currently on the program's waiting lists and in the current service areas, the cost of expansion would probably be limited to the price of the additional meals and incremental increases in other program expenses, such as the cost of paid labor, transportation to recipients' homes, equipment, and insurance.

Another way to expand program capacity would be to enter new service areas. Expansion into new areas typically necessitates increasing production, purchasing, and meal delivery capabilities. More and more home-delivered meal programs are contracting with large meal-distribution companies and "drop shipping" frozen meals to clients once each week. Thus, it is likely that the costs of expansion could be limited to the purchase price of the meals for the new service areas and the cost of finding volunteers to distribute them once a week.

However, we believe that the human interaction provided by daily meal deliveries is of great value to the recipients. Therefore, we do not encourage states to pursue once-weekly home meal delivery in their efforts to broaden program reach.

Initial Investment

Determining where the initial investment to expand meal delivery would come from is not a small consideration at a time when policy makers are looking for ways to cut existing federal and state programs. It is likely that each state would have to take a different approach in order to expand its program in an effort to achieve savings. One possible mechanism is redistributing the state's Title III funding. The Older Americans Act, permits a state to

transfer up to 30 percent of its federal allotment between Titles III-B (for in-home supportive services) and the nutrition programs in Title III-C.

States are also permitted to transfer up to 40 percent of their allotted funds between Title III-C1 (for nutrition services provided in group settings) and Title III-C2 (for home-delivered meals). These transfers may be made at the discretion of the state and require only that the state notify the assistant secretary for aging in the US Department of Health and Human Services.

We do not encourage making cuts to other Older Americans Act programs. However, some states may be able to ramp up their home-delivered meals programs by shifting funds into, or ceasing to shift funds out of, Title III-C2.

Conclusion

The US population is continuing to age, and demand is increasing for health and social services that assist older adults to live independently in the community. As a result, funding the programs that promote and sustain independent living and deliver cost savings to states will be of great importance. This article has suggested that one potential mechanism to decrease spending on institutional care and allow older adults to remain in their homes is through a relatively affordable, well-established, and popular program: home-delivered meals.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Biography

Bio 1: Kali S. Thomas (kali_thomas@brown.edu) is an assistant professor at Brown University's Center for Gerontology and Healthcare Research, and a Health Research Science Specialist at the Providence VA Medical Center in Providence, Rhode Island.

Bio 2: Vincent Mor is a professor of health services, policy, and practice at the Brown School of Public Health, in Providence.

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EXHIBIT 1

Estimated New Clients Served With A 1% Increase In The Proportion Of Elderly Adults Receiving Home-Delivered Meals, 2009

Estimated new clients	States (in descending order of new clients)
>10,000	CA, FL, NY, TX, PA, OH, IL, MI, NC, NJ, GA
10,000-5,001	VA, MA, AZ, TN, IN, MO, WA, WI, MD, MN, AL, SC, KY, LA, CO, OR
5,000–2500	OK, CT, IA, AK MS, KS, NV, WV, NM, UT
<2,500	NE, ME, ID, NH, RI, MT, DE, SD, ND, VT, WY

SOURCE Authors' analysis of 2009 data from LTCfocUS.org (see Note 7 in text).

NOTES Our analyses included only the contiguous forty-eight states. Elderly adults are ages sixty-five and older. Appendix Exhibit A5 shows estimated numbers of new clients by state (see Note 12 in text).

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EXHIBIT 2**Potential Annual Medicaid Savings From A 1% Increase In The Proportion Of Elderly Adults Receiving Home-Delivered Meals, 2009**

Annual Medicaid savings (\$)	States (in descending order of savings)
>3,000,000	NY, PA, CA, FL, OH, TX, NJ, IL, MA, MI
3,000,000–1,000,001	NC, CT, IN, WI, GA, TN, VA, MD, MN, MO, AL, KY, LA, MS, SC, WA, CO, AR, IA, OK
1,000,000–500,000	AZ, WV, KS, NH, OR, RI, ME, NE, NM
<500,000	ND, DE, ID, MT, VT, UT, NV, SD, WY

SOURCE Authors' analysis of 2009 data from LTCfocUS.org (see Note 7 in text), the State Program Reports of the Administration on Aging (see Note 1 in the text), and Medicare enrollment records.

NOTES Our analyses included only the contiguous forty-eight states. Elderly adults are ages sixty-five and older. We assumed the Medicaid payment for each dually eligible low-care resident would be the state average 2009 Medicaid payment rate. Appendix Exhibit A5 shows estimated dollar amounts by state (see Note 12 in text).

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EXHIBIT 3

Estimated Additional Annual Costs Of A 1% Increase In The Proportion Of Elderly Adults Receiving Home-Delivered Meals, 2009

Annual costs (\$)	States (in descending order of costs)
>3,000,000	CA, FL, NY, TX, IN, VA, TN, OH, MD, GA, NC, IL
3,000,000–1,500,001	CT, AZ, WA, MI, KY, NJ, PA, AL, MA, WI
1,500,000–500,000	CO, SC, OK, NV, OR, MO, WV, MN, MS, LA, IA, ME, RI, AR, KS
<500,000	ID, NE, NH, VT, UT, DE, SD, ND, NM, MT, WY

SOURCE Authors' analysis of 2009 data from the State Program Reports of the Administration on Aging (see Note 1 in the text).

NOTES Our analyses included only the contiguous forty-eight states. Elderly adults are ages sixty-five and older. Additional costs are annual Title III-C2 spending. We assumed that the average Title III-C2 spending on home-delivered meals per client reported in 2009 would be the same for the additional clients served by the program. Appendix Exhibit A5 shows estimated dollar amounts by state (see Note 12 in text).

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EXHIBIT 4

Potential Annual Financial Impact On States From A 1% Increase In The Proportion Of Elderly Adults Receiving Home-Delivered Meals, 2009

Annual impact (\$)	States (descending order of savings)
>500,000 saved	PA, NY, MA, OH, NJ, MN, IL, WI, MO, LA, MI, AR
<500,000 saved	MS, NH, IA, KS, NM, NE, ND, MT, RI, DE, WY, UT, VT, AL
<500,000 spent	SD, ID, SC, ME, WV, CO, CT, OK, OR, NC
>500,000 spent	KY, NV, GA, TX, WA, MD, AZ, TN, IN, VA, CA, FL

SOURCE Authors' analysis of 2009 data from LTCfocUS.org (see Note 7 in text), the State Program Reports of the Administration on Aging (see Note 1 in the text), and Medicare enrollment records.

NOTES Financial impact is savings (see Exhibit 2) combined with costs (see Exhibit 3). Our analyses included only the contiguous forty-eight states. Elderly adults are ages sixty-five and older.

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