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The Relationship between Older Americans Act In-Home Services and Low-Care Residents in Nursing Homes

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Abstract

Objectives—Investigate the relationship between supportive services provided under Title III-B of the Older Americans Act (OAA) and the prevalence of low-care residents in nursing homes (NH).

Methods—State Program Reports (state-level expenditure and utilization data for each OAA service), and NH facility-level data were analyzed using a two-way fixed effects model.

Results—Results suggest that every additional 1% of the population age 65+ that receives personal care services is associated with a 0.8% decrease in the proportion of low-care residents in NHs.

Discussion—Despite efforts to rebalance long-term care, there are still many NH residents who have the functional capacity to live in a less restrictive environment. This is among the first studies to suggest that states that have invested in their in-home supportive services, particularly personal care services provided through the OAA, have proportionally fewer of these people.

Keywords

Long-term Care; Nursing Homes; Home and Community Based Services

Congress passed the Older Americans Act (OAA) in 1965 in response to concern by policymakers about a lack of community social services for older persons. The OAA contains seven Titles each with different goals and filling different roles in promoting independence and preserving dignity for Older Americans. Appropriations are made to State Units on Aging to administer and provide for supportive and nutrition services authorized under Parts B, C, D, and F of Title III. Included in Title III-Bs priority services are three in-home supportive services: Personal Care, Homemaker, and Chore Services.

The OAA Title IIIB in-home services are designed to assist individuals who are unable to perform at least two activities of daily living (ADLs; such as eating, dressing or bathing) without substantial assistance (Rabiner, Wiener, Khatutsky, Brown, & Osber, 2007). The priority populations targeted for these services include frail, homebound, or isolated older Americans (Public Law 109–365). In 2010, more than 35 million hours of assistance was given to seniors who were unable to perform ADLs or instrumental ADLs (such as shopping

or light housework) through homemaker and home health aides, visiting and telephone reassurance, and chore maintenance (Administration on Aging, 2011).

Personal care services were designed to provide assistance with daily routines, such as bathing, dressing, grooming, eating, transferring, using the bathroom, and mobility. Homemaker services assist older adults in a variety of ways in the home such as preparing meals, shopping for personal items, doing light housework, and managing money. Chore services are provided to assist with tasks such as heavy housework, yard work, or sidewalk maintenance. In addition, these three priority in-home services may also be used to provide respite for the participant's caregiver. Investment in these in-home services may be one of the mechanisms that help to keep individuals in their homes as well as allow low-care residents to transition out of the NH.

While Medicaid is the largest program delivering community-based in-home supportive care, these services are only available for Medicaid-eligible individuals (Kitchener, Ng, Carrillo, Miller, & Harrington, 2007). Therefore, OAA in-home services may serve as a safety net for older adults who require assistance and are not eligible for Medicaid benefits. Previous research has indicated that states investments' in one OAA program, home-delivered meals, was significantly related to proportion of residents who had low care needs in nursing homes (Thomas & Mor, 2012, 2013). Therefore, I build on those studies and examine the relationship between the proportion of older adults in a state who receive in-home services funded by the OAA and the proportion of residents in NHs with low care needs. I hypothesize that without the OAA's in-home services, there would be more older adults in nursing homes (NHs) whose needs could better be served in the community.

METHOD

The OAA requires annual performance reporting by SUAs through the State Program Report (SPR). The SPR provides information on the characteristics of clients; the types and levels of service; expenditures of funds from the OAA and other sources; and administrative information about SUAs and local AAAs. These data were downloaded for years 2005–2009 from the Administration on Aging's Aging Integrated Database (AGID) from agid.net. From these data I obtained the main independent variables: state specific OAA priority supportive in-home services (Personal Care, Homemaker, and Chore Services) utilization rates for each year, 2005–2009. All rates were adjusted for the number of older adults aged 65+ in the state.

I merged these data with an internal file of the LTCFocUS.org, a product of the Shaping Long-Term Care in America Project being conducted at the Brown University Center for Gerontology and Healthcare Research and supported, in part, by the National Institute on Aging (www.ltcfocus.org). This dataset includes information for years 2005–2009 and combines variables from the Online Survey Certification And Reporting (OSCAR) data (administrative data collected by state survey agencies during nursing facility annual certification inspections), the Minimum Data Set (MDS) (resident-level data related to resident clinical and functional status that is aggregated to the level of the facility), and the Area Resource File (ARF).

The dependent variable, percent of residents that have low care needs, is derived from individual-level data indicating NH residents functioning and location on a given day of the year, aggregated to the facility. Consistent with previous research (Buttar, Blaum, & Fries, 2001; Hahn, Thomas, Hyer, Andel, & Meng, 2011; Mor et al., 2007; Thomas & Mor, 2012, 2013), estimates of the percentage of low-care residents were identified using RUG-III and activities of daily living (ADL) classifications. Specifically, individuals were identified as low-care if they required no physical assistance in any of the four late-loss ADLs (bed mobility, toileting, transferring, and eating) and if they were not classified in the two lowest functioning RUG-III classifications (“special rehab” or “clinically complex”). These data were 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.

From the LTCfocUS data, I also obtained several facility-level, annualized time-varying covariates that were included based on their relationship to low-care status or the provision of care in NHs found in other studies: proportion of days paid for under the Medicare skilled nursing (SNF) benefit (Thomas & Mor, 2012); proportion of Medicaid residents in the facility (Thomas & Mor, 2012); occupancy rate (Castle, 2002; Thomas & Mor, 2012); percent of admissions paid for under an HMO (Thomas & Mor, 2012); and competition using the Herfindahl Index (Castle, 2002; Thomas & Mor, 2012). In order to control for access to other home and community based services, at the market-level, defined by county boundaries, I controlled for home care capacity using the number of home health agencies per 1000 people aged 65+ in the county (Hahn et al., 2011). At the state level, I controlled for Medicaid spending on home and community-based services (HCBS; a sum of total expenditures on home health, personal care services, Aged and Disabled Waivers, 1915c Waivers, 1115 Waivers and 1915J Waivers) per capita (Eiken, Sredl, Burwell, & Gold, 2010) as states’ Medicaid HCBS generosity has been shown to be related to low-care residents in nursing homes (Mor et al., 2007). In addition, the Medicaid NH payment rate adjusted to 2009 dollars was included as this is likely to affect nursing homes’ decisions to maintain low-care residents in their facilities.

Sample

The sample includes a total of 71,984 facility-year observations from 15,034 free-standing certified NHs in the continental US. Facilities that were hospital-based were excluded from the analyses because they are very different in terms of resident severity, structure, and care practice (Stearns, Dalton, Holmes, & Seagrave, 2006). The facility had to be operating at least one full year for inclusion in the study.

Analyses

Using the XTREG procedure in STATA 11.0 (StataCorp 2009), I estimated a facility fixed effects model to examine the relationship between the proportion of older adults in the state who received the priority in-home services and the proportion of low-care NH residents from 2005–2009. A two-way fixed effect model (time and facility fixed effects) is used to control for time and time-invariant facility characteristics. This type of estimation procedure controls for secular trends and rules out all time-invariant facility factors as a source of

omitted variable bias. Huber-White robust variance estimators were applied to adjust for within-state clustering over time and the facility-year is the unit of analysis.

RESULTS

Over the study period, the average number of older adults in the state receiving Title IIIB in-home supportive services increased (see Figure 1). Accompanying those increases was a decrease in the proportion of low-care NH residents from 15% in 2005 to 13% in 2009. Table 1 provides a description of the sample at baseline (2005) and at the end of the study (2009).

Results from the two-way fixed effects model suggest that every 1% increase in the population age 65+ receiving personal care services is associated with a 0.8% decrease in the proportion of low care residents in NHs. A number of facility characteristics were related to the prevalence of low-care residents. A higher occupancy rate and a higher percentage of residents funded by Medicaid was associated with a higher prevalence of low-care residents in the facility (See Table 2). In addition, NHs with a smaller proportion of NH days covered under the SNF benefit, and a smaller proportion of admissions covered by a Medicare HMO plan were associated with a higher prevalence of low-care residents. Furthermore, this model suggests that facilities with lower CNA staffing levels have a higher prevalence of low-care residents. In terms of state characteristics, every additional \$10 that Medicaid spends on HCBS per capita is associated with a 0.008% decrease in the proportion of low-care residents.

In 2009, 91,516 individuals received OAA financed personal care services and the average expenditures per client equaled \$1,700 (range \$199-\$6,063). Results from the multivariate model suggest that if states were to increase their proportion of older adults receiving personal care services by 1%, (a state average of about 8,200 individuals), they would decrease the population in NHs with low-care needs by an average of 177 residents per state. Obviously, our model suggests states with a larger population of older adults, like California, would have to greatly increase the proportion receiving personal care services in order to see an effect (California, for example, would have to increase their number of personal care service recipients by 41,480 to keep 580 residents out of NHs.) However, states with a large number of dually-eligible low-care individuals and a high Medicaid per diem rate would see real savings: for example, New York would have to increase the number receiving personal care services by 26,197 individuals to keep 574 dually-eligible low-care residents who cost Medicaid \$229 per day, out of NHs. If these 574 dually-eligible low-care residents stayed out of the nursing home for the year, they would have saved the State of New York almost 48 million dollars spent on Medicaid-funded nursing home care in 2009.

CONCLUSIONS

Despite efforts to rebalance long-term care, there are still many NH residents who have the functional capacity to live in a less restrictive environment. This is among the first studies to provide evidence that states investing more in their in-home supportive services, particularly

personal care services provided through the OAA, have proportionally fewer of these people. The average state Medicaid payment rate for NH care in 2009 cost around \$165 a day and the average state OAA personal care *annual* spending per client equaled \$1,700. To provide an example of a state that our model suggests would have saved the most under this scenario, New Jersey spent on average \$483 per person to provide personal care services in 2009. Expanding these services to an additional 1% of the older population would have cost approximately \$5.6 million. However, the potential annual savings to Medicaid by keeping 260 dually-eligible low-care residents out of nursing homes (98% of low-care residents in New Jersey in 2009 were dually-eligible for Medicare and Medicaid (Thomas & Mor, 2013)) would have equaled \$16,487,226 in 2009. However, states with large populations of older adults, low Medicaid per-diem rates, and high spending on their OAA personal care services may not see as dramatic of savings. For example in New York where they spend almost \$5000 a year per person on personal care services, the cost to provide services to an additional 1% of the older population would FAR exceed the potential savings to Medicaid.

These results provide a roadmap for policymakers by suggesting that increasing access and utilization of Older Americans Act in-home services, particularly personal care services, offer the potential to provide real savings by keeping low-care residents out of nursing homes. Therefore, expanding services and carefully targeting frail elders for these in-home services has the potential to result in significant savings to some states while improving older Americans' quality of life.

In addition to providing potential savings to states by decreasing unnecessary NH placement, increasing the numbers of individuals receiving personal care services may result in additional benefits. Research suggests that high levels of unmet need for personal care results in compromised safety (Desai, Lentzner, & Weeks, 2001), increased risk of hospital admissions (Xu et al., 2010), higher probabilities of adverse consequences on 29 out of 34 measures including going hungry, losing weight, and dehydration (LaPlante, Kaye, Kang, & Harrington, 2004), emotional strain (Li, Chadiha, & Morrow-Howell, 2005), and depressive symptomatology among caregivers (Choi & McDougall, 2009). Given the known benefits of in-home personal care services and underutilization due to inability to access these services (Casado, van Vulpen, & Davis, 2011), expanding the program to meet the need of older adults is justified.

A major strength of this study lies in the use of a 5-year longitudinal multilevel dataset which allowed examination of state HCBS in-home service utilization on the prevalence of low-care residents that occurred over years. I controlled for national trends, Medicaid spending, and tested for the effect of changes in utilization over time, thereby addressing history and some state endogeneity. Use of a fixed effect model meant that real changes in facilities' proportion of low-care residents were independent of facility and market characteristics, all suggesting that these findings are robust.

Nonetheless, it is also necessary to note the study's limitations. This study is predicated upon the validity of the MDS functional assessment data and the assumption that residents who do not require skilled clinical services or assistance meeting their ADLs could be sustained in the community. In addition, I did not distinguish low-care residents by

Medicaid-eligibility. Increased investment in OAA is more likely to affect the general population of older adults while increased investments in Medicaid-funded HCBS are likely to only decrease the prevalence of low-care residents in NHs who are Medicaid or Medicaid LTC eligible. This research is also limited because there are no national data, by year, on the number of assisted living facilities in each county. It is possible that access to assisted living may be related to low-care residents in nursing homes. However, our results suggest that it is personal care services (assistance with ADLs) that are related to low-care residents: depending on the state, ADL assistance is not a service provided in assisted living. Future research should investigate the relationship between assisted living bed availability and low-care residents in nursing homes.

The use of state reported data could leave us to question the validity and consistency of the data from state to state. However, because I chose programs that require extensive client information to receive services, I believe that the record keeping and reporting would be more standardized from state to state. Another potential limitation is the use of older adults aged 65+ to adjust for utilization rather than the number of older adults aged 60+, for whom this federal was designed. However, census data only report projections for the aggregate numbers of 65+ in each year and OAA requires Title III programs to target or make it a priority to serve older adults with the greatest economic and social need. Therefore, I believe adjusting for the number of older adults aged 65+ in the state is appropriate and has been done elsewhere to present OAA data (Thomas & Mor, 2012; United States Government Accountability Office, 2011).

As the US prepares for an aging population and the demand for health and social services necessary to assist older adults to live independently in the community increases, ensuring access to HCBS will likely continue to be an issue for policymakers. This paper reveals that states that have invested in and increased personal care services utilization have proportionally fewer older adults in NHs that have the functional capacity to live in a less restrictive and less expensive environment.

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Figure 1. Average number of Older Adults in the State Receiving OAA Title IIIB In-Home Supportive Services

Source: OAA State Program Reports

Table 1

Descriptive Characteristics of Sample at Beginning and End of Study

Variable	2005		2009	
	Mean	SD	Mean	SD
<i>Facility Characteristics</i>				
Percent Low Care	15%	12%	13%	12%
Percent Medicaid	61%	24%	60%	24%
Ratio of RNs to Nurses	0.30	0.20	0.30	0.19
CNA Hours per Resident Day	2.30	1.16	2.31	1.40
Occupancy Rate	84%	15%	83%	16%
Percent of NH days that are SNF	17%	19%	19%	19%
Percent of Admissions that are HMO	7%	10%	13%	12%
<i>Market Characteristics</i>				
#HHAs per 1000 65+	0.38	0.41	0.36	0.45
Herfindahl Index	0.60	0.33	0.60	0.33
<i>State Characteristics</i>				
Adjusted Medicaid payment rate	\$153.22	\$29.27	\$164.07	\$28.00
Medicaid expenditures on HCBS per capita	\$48.60	\$35.71	\$70.55	\$48.73
<i>OAA Title III Services</i>				
% of Older Adults Receiving Personal Care Services	0.20%	0.25%	0.19%	0.39%
% of Older Adults Receiving Homemaker Services	0.14%	0.24%	0.12%	0.19%
% of Older Adults Receiving Chore Services	0.44%	0.46%	0.47%	0.88%

Notes. SD= Standard Deviation; RN= Registered Nurse; CNA= Certified Nursing Assistant; SNF=Skilled Nursing Facility; HMO= Health Maintenance Organization; HHA= Home Health Agencies; HCBS= Home and Community Based Services; OAA= Older Americans Act.

Table 2

Results from the Multivariate Analysis

	Coef.	Std. Err.	P>t
<i>OAA Title III Services</i>			
% of Older Adults Receiving Personal Care Services	-0.756	0.366	0.039
% of Older Adults Receiving Homemaker Services	0.151	0.156	0.334
% of Older Adults Receiving Chore Services	0.975	0.569	0.087
<i>Facility Characteristics</i>			
Percent Medicaid	0.011	0.003	0.000
Ratio of RNs to Nurses	-0.006	0.227	0.981
CNA Hours per Resident Day	-0.101	0.029	0.001
Occupancy Rate	0.027	0.003	0.000
Percent of NH days that are SNF	-0.102	0.005	0.000
Percent of Admissions that are HMO	-0.031	0.004	0.000
<i>Market Characteristics</i>			
#HHAs per 1000 65+	-0.089	0.151	0.557
Herfindahl Index	0.303	0.232	0.191
<i>State Characteristics</i>			
Adjusted Medicaid payment rate	0.007	0.005	0.139
Medicaid expenditures on HCBS per capita	-0.008	0.004	0.034

Notes:

Medicaid Expenditures on HCBS per Capita was divided by 10 for ease of interpretation.

Robust standard errors adjusted for clustering within facility. Year and facility dummy variables not shown. The first year, 2005, was the reference
 RN= Registered Nurse; CNA= Certified Nursing Assistant; SNF=Skilled Nursing Facility; HMO= Health Maintenance Organization; HHA= Home Health Agencies; HCBS= Home and Community Based Services; OAA= Older Americans Act.