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Medicare hospice care in US nursing homes: a 2006 update

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Abstract

Introduction—This research examines 2006 population-based data on persons who died in US nursing homes (NHs) and received hospice in the NH.

Methods—We compared dying persons characteristics and lengths of hospice stay in five US states between 1992 and 1996 and in 2006. We also compared characteristics of dying persons in 2006 by whether they first entered hospice in the community (i.e. ‘community-NH’, $N = 12,950$) or the NH (i.e. ‘NH-only’, $N = 159,065$).

Results—In five US states, dying persons who received NH hospice in 2006, compared to 1992–1996, were older, had more short hospice stays (< 7 days), and were less frequently diagnosed with cancer. Also, in 2006, dying persons receiving ‘NH-only’ versus ‘community-NH’ hospice were older, had more short stays, and were less frequently diagnosed with cancer.

Discussion—Persons in 2006 who received hospice in the community and in the NH (vs. ‘NH-only’) were strikingly similar to hospice participants in 1992–1996. 2006 ‘NH-only’ vs. ‘community-NH’ dying persons, more closely resemble U.S. NH residents.

Keywords

End of life; hospice; nursing home

Introduction

Medicare hospice in the US is a palliative care alternative to curative and/or aggressive treatment near the end of life. It focuses on managing physical and psychosocial distress and includes counseling and support for patients and their families. The US Medicare system began financing hospice to patients in the early 1980s to improve end-of-life experiences and to reduce the high cost associated with curative treatment during the last several months of life. Eligible nursing home (NH) residents can receive hospice services, as provided by contracted hospice providers,¹ in addition to services received by NH staff. Since its inception, Medicare hospice utilization has increased dramatically and spending on this Medicare benefit has more than tripled between 2000 and 2007, reaching US\$10 billion in 2007.² During this time, there was also an increase of more than 1000 hospice providers.²

Hospice care is provided in a number of different settings including patients’ homes, free-standing hospice facilities, NHs, and hospitals. Persons are eligible for hospice if they are Medicare eligible, and most of these persons are older adults although disabled younger persons may also qualify for Medicare. Some private insurance may cover hospice benefits

as well. In order to receive the Medicare hospice benefit, two physicians must certify that the beneficiary has a 6-month terminal prognosis, if the disease runs its normal course. Certification periods include two initial 90-day periods and an unlimited number of 60-day periods, with no capped duration. To continue with each additional period, two physicians must certify that the beneficiary has a 6-month terminal diagnosis.

Research has found NH residents who enrolled in Medicare hospice were less likely than non-hospice NH residents to be hospitalized in the last 30 days of life or to die in a hospital.^{3,4} Additionally, NH residents enrolled in hospice more consistently received daily pain treatment than non-hospice NH residents.⁵ Finally, lower proportions of hospice patients versus non-hospice patients experienced physical restraints or had feeding tubes inserted.⁶

A previous study of NH persons who died in 1992–1996 conducted in five US states (Kansas, Maine, Mississippi, New York, and South Dakota) found 6% of dying persons received Medicare hospice care at some point prior to death.⁷ It also found an estimated 24% of all Medicare hospice patients in these five states received hospice in NHs in 1996. A more recent study shows Medicare hospice use by all deceased US NH residents was 33% by 2006.⁸ However, in 2006 it is still estimated that NH residents comprise approximately one-quarter of all Medicare hospice recipients, reflecting growth in hospice use both in the community and in NHs.⁸

Our study aimed to understand how the characteristics of NH residents using hospice may have changed over time, given the large growth in NH hospice use. Specifically, we compared the 1992–1996 data from the five-state study⁷ to the 2006 data drawn from the same US states. Also, we present data on NH hospice participants who died in 2006 in the 50 US states and the District of Columbia and, as in the previous five-state study, we examine how NH hospice characteristics and lengths of hospice stay differ among persons who died while in hospice depending on where they first entered hospice (i.e. in the community or in the NH).

Methods

Data sources

With the appropriate government data use agreement in place and with approval from the University's institutional review board, we merged resident assessment data (minimum data set; MDS) with Medicare claims and denominator data (containing vital statistics data) for the US population of residents in 2006 who died in NHs across the 50 US states and the District of Columbia. The MDS is part of a federally mandated system [passed by the US Congress in the Omnibus Budget Reconciliation Act (OBRA) 1987],⁹ that assures uniform assessments that trigger plans for residents' care in all US NHs. MDS data include sociodemographics and the diagnosis closest to a resident's death. In addition to Medicare claims data, we utilized the International Classification of Diseases, 9th revision, Clinical Modification (ICD-9-CM) diagnostic codes associated with residents' hospice claims to identify diagnoses.

To determine Medicare eligibility and if and when death occurred, our data set of NH residents was matched to Medicare claims data and the Medicare denominator files. A confirmed NH death was defined as a Medicare beneficiary whose death occurred within 1 day of an identified NH stay or within 7 days of transfer from the NH to a hospital (as done in previous research).^{10,11}

Population studied

For the five-state comparison, we identified 11,411 NH residents from Kansas, Maine, Mississippi, New York, and South Dakota who died in 2006 and received hospice care. For all states in 2006, there were 519,675 confirmed deaths in US NHs. Of these, our research focused on the one-third ($N = 172,015$) who received hospice while in the NH (whose hospice claims overlapped with their NH stay). From this group, we defined two groups of hospice patients according to where they first entered the NH hospice. NH hospice dying persons who began hospice in the community and continued hospice in the NH, or who had fewer than 6 months between community and NH hospice, represented one comparison group comprising 7.5% of the total population ($N = 12,950$). We identified this group as 'community-NH' hospice residents. Most dying persons belonging to the community-NH hospice group (82.6%) were continuously enrolled in hospice (i.e. admitted to the NH on hospice). A second group of NH hospice residents were those first admitted to hospice in the NH and they represented 92.5% of the total population ($N = 159,065$). We identified this group as 'NH-only' hospice residents.

Measures

Demographic and social variables were obtained from the resident assessment (MDS) closest to death and included age, gender, race/ethnicity, and marital status. Age categories were created from a continuous variable, and included: <65 years, 65–74 years, 75–84 years, and 85 years. Gender was coded as male or female. Race was coded using the MDS categories of White, non Hispanic Black, Hispanic, and other. Marital status was coded as married, widowed, separated, divorced, and never married.

Dates on the Medicare hospice claims were used to identify hospice lengths of stay (i.e. total number of days on the Medicare hospice benefit). We calculated total days of hospice stays by counting all days of care across all hospice episodes (excluding any episodes occurring over 6 months prior to a NH admission). The resulting continuous variable was broken into six length-of-stay categories: 7 days, 8–14 days, 15–30 days, 31–90 days, 91–180 days, and 181 days.

Diagnoses were determined from the principal diagnoses as reported on the hospice claims (ICD-9-CM). Diagnosis codes were grouped into distinct diseases or disorders according to the official coding in the ICD-9-CM alphabetical and tabular listing. Diagnosis categories are presented by two groupings. The first grouping directly matches the diagnoses used in 1992–1996,⁷ and thus reflects the top 13 NH hospice diagnoses in 1992–1996. The second group of diagnoses reflects the 15 most prevalent diagnoses in 2006.

Data analyses

We used percentages and means (with standard deviations) to describe and compare dying persons' sociodemographic and health characteristics and hospice lengths of stay. We tested the statistical significance of observed differences using the Chi-square statistic and t-tests.

Results

There were many notable differences in NH hospice dying persons and their hospice use when we compared data from 1992–1996 to that from 2006 in the five states of interest (see Tables 1 and 2, and Figure 1). The proportion of NH hospice dying persons aged 85 years was greater in 2006 than in 1992–1996 (58% vs. 45%) and 2006 hospice dying persons were more racially diverse compared to hospice dying persons in 1992–1996 (10% vs. 6% non-white). Furthermore, the proportion of hospice recipients in NHs who were diagnosed with cancer was much lower in 2006 (19%) than in 1992–1996 (43%). However, neurological

disorders were more common in 2006 than in 1992–1996, including non-Alzheimer's dementia (10% vs. 4%), Alzheimer's disease (10% vs. 4%), and a more general category of 'failure to thrive' (6% vs. 3%; Table 2). Finally, the average length of hospice stay was lower in 2006 than in 1992–1996 (mean = 88 vs. 121 days), and in 2006 compared with 1992–1996, a larger proportion of dying persons received hospice for ≤ 7 days (29% vs. 21%) while the proportion of persons with stays of ≥ 181 days was 15% for both groups (Figure 1). Twenty-three per cent of NH enrollees who died in 2006 were at one time enrolled at a NH hospice.

Data summaries from 2006 for the full US population and the District of Columbia are shown in Tables 3 and 4, and Figure 2. Nursing home hospice residents who entered hospice when already living in a NH ('NH-only' group), compared with those who entered hospice in the community ('community-NH' group), were older (mean age = 85 vs. 81), more frequently over the age of 85 years (57% vs. 39%), more frequently female (69% vs. 56%), and less frequently had a diagnosis of cancer (15% vs. 42%; Tables 3 and 4). Also, the 'community-NH' group had a significantly longer mean length of hospice stay compared with the 'NH-only' group (135 days vs. 90 days; compared to a combined mean of 93 days). Contributing to these observed differences were the much lower proportion of hospice stays of ≤ 7 days for the 'community-NH' versus the 'NH-only' hospice decedents (18% vs. 32%) and the higher proportion of stays of ≥ 181 days (23% vs. 15%) for 'community-NH' versus 'NH-only' decedents. As the 'NH-only' group comprises the vast majority of the NH hospice population, the same estimates for the entire population are similar; for the 2006 NH hospice population the proportion with stays of ≤ 7 days was 30.5% and the proportion with stays of ≥ 181 days was 15.5%).

Discussion

Study findings point to important changes over time in the NH hospice population in five US states. In 1992–1996, almost half of the persons who utilized hospice in the NH were diagnosed with cancer. By contrast, only one-fifth of dying persons with NH hospice in 2006 had cancer diagnoses, and higher proportions had diseases such as Alzheimer's disease, debility or failure to thrive. Also, NH hospice dying persons in 2006 were older and more frequently non-white than those in 1992–1996. Similar to the five states, in the US overall a high proportion of the NH hospice population had non-cancer diagnoses in 2006. However, similar to previous research,⁷ there was a small group of NH hospice participants in 2006 who entered hospice from their homes in the community and continued hospice services after being admitted into a NH. This group more closely resembles the 1992–1996 NH hospice population and less closely resembles US NH decedents overall.

Our research shows that, in the five states studied, NH hospice dying persons in 2006 had shorter lengths of hospice stay than NH hospice dying persons in 1992–1996, mostly attributable to higher proportions of short stays (≤ 7 days). In 2006, across all US states we observed both high proportions of short stays (30.5%) and of long hospice stays (≥ 181 days; 15.5%). However, the length of stay was highly dependent on whether NH residents first sought hospice care in the community or after NH admission. For example, at the 90th percentile, the length of stay for NH dying persons who first entered hospice in the community was 376 days while it was 266 days for dying persons who first entered hospice in the NH; in contrast, the 90th percentile for the total Medicare hospice population in 2006 was approximately 220 days.² Therefore, while residents receiving hospice in NHs experienced longer lengths of stay than the general population of hospice patients,⁸ these differences are far more notable for those NH hospice dying persons who began hospice in the community prior to NH admission, a group which comprises 8% of the total NH hospice population.

We found that a much higher proportion of older adults were utilizing hospice services for 7 days in 2006 compared to 1992–1996. This finding probably reflects the increasing prevalence of non-cancer diagnoses and the difficulties associated with Medicare hospice referral for such residents.^{12,13} Unfortunately, short hospice stays are associated with negative outcomes for both patients and their families.^{14,15}

Results show a striking similarity between NH hospice dying persons in the 1992–1996 five-state sample and NH hospice dying persons in 2006 who began hospice while living in the community. Also, this group of community-NH hospice dying persons more closely resembles persons who receive hospice care in community-based settings while the NH-only group more closely resembles persons dying in US NHs. In the US in 2001, 67% of older persons with dementia-related diagnoses and 28% of persons with other non-cancer diagnoses died in NHs, while only 21% of those with cancer diagnoses died in NHs.¹⁶ Therefore, to provide hospice care to all but a very small proportion of dying NH residents means substantial care will be provided to persons with non-cancer diagnoses, a high proportion of whom will have dementia-related diagnoses. This is, in fact, what we observed in the five study states –hospice enrollment increased from 6% in 1992–1996 to 33% in 2006, and the proportion of residents with non-cancer diagnoses increased from 57% to 80%. However, across the US the proportion of hospice residents with non-cancer diagnoses is even larger (85%) when we consider only those hospice decedents who were admitted to hospice after NH admission.

Conclusions

Our findings show substantial differences over time in the characteristics and diagnoses of NH residents being cared for by hospices in five US states. Importantly, with the growth in hospice use we find decedents enrolling in hospice in the five study states more frequently have non-cancer diagnoses and short hospice stays. Also, we find NH residents who first enter hospice in the community to be a distinctly different population from those who enter hospice after NH admission, with important differences in sociodemographics, diseases or conditions, and hospice lengths of stay. In 2006, US Medicare-certified hospices caring for NH residents served a population with primarily non-cancer diagnoses and with prevalent neurocognitive disorders, conditions common in US NHs. Of clinical and policy concern is the high proportions of short and long hospice stays experienced by this population.

Study limitations

This study has three main limitations. First, data were only available for five states in 1992–1996, restricting our direct comparison to a subpopulation. Secondly, diagnoses are not all inclusive as they reflect only the principal hospice diagnosis. Finally, the population data included more missing data in the MDS for the group who first received hospice services in the community, especially regarding marital status. Further investigation would be necessary to determine why.

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Figure 1.
Length of stay of nursing home dying persons who received hospice in five US states.

Figure 2.

Length of stay of nursing home decedents according to type of admission into hospice on full US population in 2006^a.

^aDifferences are statistically significant at the $p < 0.001$ level using the Chi-square statistic and t -tests.

^b'Post' refers to nursing home residents who did not receive hospice prior to being a resident and only received it when enrolled in the nursing home. 'Crossover' refers to nursing home residents who received hospice prior to moving into the nursing home and also received it while in the nursing home.

NH: nursing home.

Table 1Sociodemographic characteristics of nursing home dying persons who received hospice in five US states^a

Sociodemographic characteristic	1992–1996 N = 10,845 % (N)	2006 N = 11,411 % (N)
<i>Age</i>		
<65	3.0 (323)	2.7 (306)
65–74	15.5 (1685)	9.2 (1047)
75–84	37.0 (4008)	30.2 (3445)
85	44.5 (4829)	57.9 (6609)
<i>Missing</i>	–	0.04 (4)
<i>Gender</i>		
Male	32.0 (3470)	31.5 (3589)
Female	68.0 (7375)	68.5 (7819)
<i>Missing</i>	–	0.03 (3)
<i>Race/ethnicity</i>		
White	94.4 (10,241)	90.3 (10,305)
African American	4.1 (441)	6.8 (777)
Hispanic	0.2 (18)	2.0 (230)
Native American	0.05 (5)	0.3 (30)
Other ^b	0.5 (57)	0.4 (44)
<i>Missing</i>	0.8 (83)	0.2 (25)
<i>Marital Status</i>		
Married	24.7 (2679)	22.5 (2571)
Widowed/divorced	64.1 (6954)	64.6 (7368)
Separated	0.9 (103)	1.1 (128)
Never married	7.8 (843)	8.5 (972)
<i>Missing</i>	2.4 (266)	3.3 (372)

^aThe five states include: Kansas, Maine, Mississippi, New York, and South Dakota.^b1992–1996 includes Asian and others, 2006 includes Asian and Pacific Islanders.

Table 2

Principal diagnoses from hospice claims of nursing home dying persons who received hospice in five US states^a

Principal diagnosis	1992–1996 N = 10,845 % (N)	2006 N = 11,411 % (N)
Total with cancer	42.7 (4631)	19.4 (2212)
Lung cancer	8.7 (944)	5.0 (572)
Colorectal cancer	5.6 (603)	2.4 (274)
Breast cancer	4.7 (512)	1.8 (203)
Metastasis (coded as principle diagnosis)	1.4 (148)	1.1 (120)
Dementia	3.9 (424)	10.2 (1159)
Alzheimer's disease	3.9 (420)	9.6 (1093)
Failure to thrive	2.8 (308)	5.6 (635)
Unspecified psychosis	1.7 (180)	0.2 (26)
CVA	6.0 (646)	4.5 (516)
Chronic heart disease	1.4 (149)	1.0 (110)
Heart failure	8.5 (920)	8.3 (952)
Renal failure	2.8 (301)	2.6 (297)
Parkinson's disease	1.7 (186)	1.8 (202)
COPD	4.8 (520)	4.9 (462)
Other	17.9 (1946)	32.8 (3747)
Missing	0.6 (66)	–

^aThe five states include: Kansas, Maine, Mississippi, New York, and South Dakota.

COPD: chronic obstructive pulmonary disease, CVA: cerebrovascular accident.

Table 3

Sociodemographic characteristics of nursing home dying persons according to type of admission into hospice on full US population in 2006^a

Sociodemographic characteristic	All NH hospice enrollees N = 172,015 % (N)	'Post' ^b NH-only N = 159,065 % (N)	'Crossover' ^b community-NH N = 12,950 % (N)
<i>Age</i>	Mean = 84.9, SD = 9.3	Mean = 85.2, SD = 9.2	Mean = 81.1, SD = 10.4
<65	3.2 (5519)	3.0 (4711)	6.3 (808)
65–74	9.8 (16,927)	9.2 (14,542)	18.4 (2385)
75–84	31.6 (54,297)	31.2 (49,555)	36.7 (4742)
85	55.3 (95,152)	56.7 (90,154)	38.6 (4998)
<i>Missing</i>	0.1 (120)	0.06 (103)	0.1 (17)
<i>Gender</i>			
Male	32.3 (55,518)	31.3 (49,777)	44.4 (5741)
Female	67.6 (116,367)	68.7 (109,180)	55.6 (7187)
<i>Missing</i>	0.1 (130)	0.07 (108)	0.1 (22)
<i>Race/ethnicity</i>			
White	89.1 (153,191)	89.3 (141,852)	87.6 (11,339)
Black, non-Hispanic	7.3 (12,495)	7.3 (11,533)	7.5 (962)
Hispanic	2.5 (4231)	2.4 (3874)	2.8 (357)
Other: (native American; Asian; Pacific Islander)	1.0 (1719)	1.0 (1526)	1.5 (193)
<i>Missing</i>	0.2 (379)	0.2 (280)	0.8 (99)
<i>Marital status</i>			
Married	23.4 (40,236)	23.7 (37,695)	19.6 (2541)
Widowed	57.3 (98,574)	59.6 (94,817)	29.0 (3757)
Separated	1.0 (1757)	1.1 (1674)	0.6 (83)
Divorced	7.1 (12,132)	7.2 (11,446)	5.3 (686)
Never married	7.5 (12,853)	7.8 (12,355)	3.8 (498)
<i>Missing</i>	3.8 (6463)	0.7 (1078)	41.6 (5385)

^aAll differences are statistically significant at the $p < 0.001$ level using both the Chi-square statistic and t -tests.

^b'Post' refers to nursing home residents who did not receive hospice prior to being a resident and only received it when enrolled in the nursing home. 'Crossover' refers to nursing home residents who received hospice prior to moving into the nursing home and also received it while in the nursing home.

NH: nursing home.

Table 4

Top 15 hospice claim diagnoses of nursing home dying persons according to type of admission into hospice on full US population in 2006^a

Diagnosis	All NH hospice enrollees (<i>N</i> = 172,015) % (<i>N</i>)	'Post' ^b NH-only (92.4%, <i>N</i> = 158,987) % (<i>N</i>)	'Crossover' ^b community-NH (7.6%, <i>N</i> = 13,028) % (<i>N</i>)
Debility	11.7 (20,207)	12.3 (19,529)	5.2 (678)
Alzheimer's disease	10.8 (18,530)	11.2 (17,871)	5.1 (659)
Dementia	8.5 (14,543)	8.9 (14,188)	2.7 (355)
Failure to thrive	7.8 (13,413)	8.2 (12,957)	3.5 (456)
CVA/stroke	4.8 (8229)	4.9 (7783)	3.4 (446)
Heart failure	7.9 (13,524)	8.0 (12,699)	6.3 (825)
Chronic heart disease ^a	1.5 (2514)	1.5 (2325)	1.5 (189)
Chronic obstructive pulmonary disease ^a	5.0 (8612)	5.0 (7913)	5.4 (699)
Parkinson's disease	1.9 (3338)	2.0 (3194)	1.1 (144)
Renal failure	2.8 (4787)	2.9 (4573)	1.6 (214)
Total with cancer	17.1 (29,495)	15.1 (23,976)	42.4 (5519)
Lung cancer	4.8 (8285)	4.0 (6308)	15.2 (1977)
Colorectal cancer	2.0 (3729)	2.0 (3147)	4.5 (582)
Breast cancer	1.6 (2725)	1.5 (2316)	3.1 (409)
Prostate cancer	1.4 (2440)	1.3 (2008)	3.3 (432)
Metastasis	0.8 (1382)	0.7 (1138)	1.9 (244)
Other	20.2 (34,823)	20.1 (31,979)	21.8 (2844)

^aAll comparisons are statistically significant at the $p < 0.001$ level using the Chi-square statistic except for chronic heart disease which is not significant and chronic obstructive pulmonary disease which is significant at the $p < 0.05$ level. *T*-tests significant at the $p < 0.001$ level except for chronic heart disease which is not significant ($t = 0.02$).

^b'Post' refers to nursing home residents who did not receive hospice prior to being a resident and only received it when enrolled in the nursing home. 'Crossover' refers to nursing home residents who received hospice prior to moving into the nursing home and also received it while in the nursing home.

CVA: cerebrovascular accident, NH: nursing home.