CHAPTER 8

Evaluating Medicare's hospice benefit

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Chapter summary

Medicare's hospice benefit, which provides palliative care and support services for terminally ill patients and their families, has grown considerably since its inception in 1983. CMS estimates that Medicare spending under the hospice benefit exceeded $10 billion in fiscal year (FY) 2007, more than the program spends on inpatient rehabilitation hospitals, critical access hospitals, long-term care hospitals, psychiatric hospitals, comprehensive outpatient rehabilitation facilities, or ambulatory surgical centers. Medicare spending for hospice is expected to more than double in the next 10 years (OACT 2008) and will account for roughly 2.3 percent of overall Medicare spending in FY 2009.

Spending growth has been driven by increased numbers of beneficiaries using hospice and longer hospice stays for those who elect the benefit. In 2005, roughly 40 percent of Medicare decedents used hospice, compared with only 27.3 percent in 2000. Between 2004 and 2005, the number of beneficiaries using hospice increased by 10 percent, hospice spending per user increased by nearly 8 percent, and overall spending on hospice grew by nearly 20 percent (CMS 2007a). By contrast, total

In this chapter

Medicare enrollment increased by about 2.5 percent, per capita spending increased about 7.1 percent, and total spending grew by 8.9 percent over this period.

Because of the per diem–based structure of Medicare's hospice payment system, increased spending per beneficiary has been driven largely by increases in the average length of stay in hospice. Part of this increase reflects changes in the mix of patients electing hospice. At the outset of the hospice benefit, most patients who elected hospice had terminal diagnoses such as cancer and other relatively acute conditions for which a reasonably certain prognosis of death within six months could be established. Now, cancer patients are a minority (although still a substantial percentage) of hospice enrollees. Patients with diagnoses such as Alzheimer's disease, nonspecific debility, and congestive heart failure, who typically have longer stays, make up the majority of Medicare's hospice patients. However, change in patient mix does not entirely explain the increases in hospice length of stay we observe.

Concomitant with the change in patient mix, a small but growing number of hospices are exceeding an aggregate per beneficiary limit on Medicare payments, the more prominent of two so-called "hospice caps." The caps were implemented at the beginning of the benefit to ensure that hospice care would be less costly than curative treatments for terminal conditions, and that hospice would not become a de facto long-term care benefit. Some have expressed concerns that large cap assessments would force hospices to close, affecting beneficiary access to hospice care.

We found that hospices with payments exceeding the cap differed from those with payments remaining below the cap, generally having a higher percentage of patients with terminal diagnoses associated with longer hospice stays, such as dementia and congestive heart failure, than hospices that did not exceed the cap. However, patient mix alone did not explain why hospices exceeded the cap. Across all diagnoses, the average length of stay for above-cap hospices exceeded that for below-cap hospices by 23 percent to 122 percent. These findings suggest, among other issues, the presence of financial incentives in Medicare's hospice payment system to provide long stays that may lead some hospices to exceed the cap. These incentives may work to undermine one of the fundamental premises underlying the establishment of the hospice benefit, that in addition to offering beneficiaries a choice in their end-of-life care consistent with their wishes to avoid intensive medical interventions, the hospice benefit would result in lower Medicare spending relative to conventional end-of-life care. Additionally, certain market issues may affect whether hospice programs are at greater risk of exceeding the cap. Analyses of hospice length of stay on a market-by-market basis may shed additional light on this question.

In comparing Medicare's payments with hospices' costs, we found that payments were generally adequate in the aggregate but that hospices' financial performance under Medicare varied considerably. The aggregate Medicare margin for all hospices was 3.4 percent in 2005. Hospices that exceeded the cap had among the highest Medicare margins (before the return of overpayments), as longer stays under this payment system led to higher margins. Because of the lack of data on services provided to patients with specific diagnoses, we could not determine the adequacy of Medicare payments relative to the cost of hospice care on a condition-specific basis, nor could we determine conclusively whether the payment system encourages or discourages the admission of certain patients to hospice on the basis of their profitability.

Hospice care has changed significantly in the 25 years since Medicare implemented the hospice benefit, with the most significant changes occurring in the last seven years. Hospice was a niche benefit at first, but in 2007 nearly 40 percent of Medicare decedents had used the hospice benefit. CMS encouraged use of hospice for clinically appropriate patients on multiple occasions since 2000. The profile of the beneficiary population electing hospice has changed considerably, as has the profile of hospice providers. Most hospice providers in 1983 were nonprofits affiliated with religious or community organizations. Now, for-profit hospices make up a majority of providers and constitute the vast majority of the new entrants into the Medicare program since 2000.

During this time of major change, Medicare's payment system for hospice care has changed relatively little. Payments have been updated over time, but otherwise the basic structure is much as it was in 1983, with per diem reimbursements for four types of care, and few reporting requirements to assist in refining or evaluating the benefit. As a result, changes in the provision of hospice care have exposed weaknesses in the Medicare payment system and adverse incentives that may unduly influence some hospices to provide care in a manner not warranted by patients' clinical needs. CMS has begun efforts to improve the availability of data that could inform payment system improvements and is developing measures to assess the quality of end-of-life care that could be relevant to improvements in the Medicare hospice payment system. Substantially more data will be needed—data that historically have been uniquely lacking in hospice—to address these concerns and modernize Medicare's payment system for hospice. ■

Medicare's hospice benefit

Medicare began offering a hospice benefit in 1983, pursuant to the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). The benefit covers palliative and support services for terminally ill beneficiaries who have a life expectancy of six months or less if the terminal disease follows its normal course. Two physicians, typically the patient's doctor and a hospice physician, must certify the prognosis for a patient to be eligible to elect hospice. Covered services include:

- nursing care provided by or under the supervision of a registered nurse;
- medical social services provided by a social worker under the direction of a physician;
- physicians' services;
- counseling services provided to the patient and family members or other persons caring for the patient at home;
- short-term inpatient care (including respite care) provided in a participating hospice inpatient unit or a participating hospital or skilled nursing facility;
- medical appliances and supplies;
- drugs and biologicals related to the individual's terminal illness;
- home health aide services and homemaker services;
- certain physical therapy, occupational therapy, and speech–language pathology services for purposes of symptom control or to enable the patient to maintain activities of daily living and basic functional skills;
- any other service that is specified in the patient's plan of care as reasonable and necessary for the palliation and management of the patient's terminal illness and related conditions; and
- bereavement services available for the patient's family for up to a year after the patient's death.

Beneficiaries must "elect" the Medicare hospice benefit; in so doing, they agree to forgo Medicare coverage for curative treatment for the terminal illness. Medicare continues to cover items and services unrelated to the terminal illness. A written plan of care must be established and maintained by the attending physician, the medical director, or the physician designee and by an interdisciplinary group for each person admitted to a hospice program, according to Medicare's current conditions of participation.[1] In addition to the physician, the interdisciplinary group consists of a registered nurse, social worker, and pastoral or other type of counselor. Hospices are also required to use volunteers to provide services equal to at least 5 percent of total paid patient care time. The plan of care must assess the patient's needs, identify services to be provided (including management of discomfort and symptom relief), and describe the scope and frequency of services needed to meet the patient's and family's needs.

Beneficiaries elect hospice for defined benefit periods. These periods have changed over time in significant ways. When first established under TEFRA, the Medicare hospice benefit incorporated a fairly tight benefit period structure. A beneficiary could elect hospice for a 90-day coverage period, followed by (if necessary) a second 90-day period, and a subsequent 30-day period. Beyond this total 210-day period, Medicare's coverage ceased. The Medicare Catastrophic Coverage Repeal Act of 1989 and the Balanced Budget Act of 1997 eased this limit. Under the current policy, the first hospice benefit period is 90 days. If the patient's terminal illness continues to engender the likelihood of death within 6 months, the patient can be recertified for another 90 days. After the second 90-day period, the patient can be recertified for an unlimited number of 60-day periods, as long as he or she remains eligible. Beneficiaries can switch from one hospice to another once during a hospice election period and can disenroll from hospice at any time.

The relaxation of the initial limits on the length of time a beneficiary could enroll in hospice has created a tension with one of the key coverage criteria for use of the benefit—the prognosis of likely death due to a terminal condition within six months. The criterion of impending death still governs eligibility for a Medicare beneficiary's admission to hospice; once admitted, however, beyond the episodic need for recertification by the patient's physician and the hospice director, there is no limit on the duration of time a beneficiary can receive hospice care. Average length of enrollment in hospice has been increasing since the coverage period was expanded in 1997 (MedPAC 2006, OIG 1997).

Medicare payment for hospice

The Medicare program pays a daily rate to hospice providers for each day a beneficiary is enrolled in

TABLE 8–1

Medicare pays for four categories of hospice care

Category	Description	Base payment rate, FY 2008	Labor share, FY 2008	Share of days, FY 2005
Routine home care (RHC)	Home care provided on a typical day	$135 per day	69%	94.9%
Continuous home care (CHC)	Home care provided during periods of patient crisis	$32.86 per hour	69	2.8
Inpatient respite care (IRC)	Inpatient care for a short period to provide respite for primary caregiver	$140 per day	54	0.2
General inpatient care (GIC)	Inpatient care to treat symptoms that cannot be managed in another setting	$601 per day	64	2.2

Note: FY (fiscal year). Payment for CHC is an hourly rate for care delivered during periods of crisis if care is provided in the home for 8 or more hours within a 24-hour period beginning at midnight. A nurse must deliver half of the hours of this care to qualify for CHC-level payment. The minimum daily payment rate at the CHC level is $263 per day (8 hours at $32.86 per hour); maximum daily payment at the CHC level is $789 per day (24 hours at $32.86 per hour). Shares of days may not sum to 100 percent due to rounding.

Source: Base payment rates and labor shares are from CMS Manual System Pub. 100–04 Medicare Claims Processing, Transmittal 1280, "Update to the Hospice Payment Rates, Hospice Cap, Hospice Wage Index and the Hospice Pricer for FY 2008." Data on share of days are from CMS's analysis of 100 percent hospice standard analytical files from CMS for fiscal year 2005.

hospice. The hospice assumes all financial risk for costs and services associated with care related to the patient's terminal illness. The hospice provider receives payment for every day a patient is enrolled, regardless of whether the hospice provided a visit to the patient each day. This payment design encompasses the costs a hospice incurs for on-call services, care planning, drugs, medical equipment and supplies related to the patient's terminal condition, patient transportation between hospice care sites, and other less frequently used services. Payments are made according to a fee schedule that has base payment amounts for four categories of care: routine home care, continuous home care, inpatient respite care, and general inpatient care. The payment rates have been increased for inflation and on occasion have been adjusted via specific legislative provisions, but the payment methodology and the base rates for hospice care have not been updated since initiation of the benefit.

The four payment categories are distinguished by the location and intensity of the services provided. The base payment rates are adjusted for geographic differences in wages by multiplying the labor share, which varies by category, of each base rate by the applicable hospice wage index (Table 8-1).[2] A hospice is paid the routine home care rate for each day the patient is enrolled in hospice, unless the hospice provides continuous home care, inpatient respite care, or general inpatient care. Routine home care accounts for the vast majority of hospice care days.

Beneficiary cost sharing for hospice services is minimal. Hospices may charge a 5 percent coinsurance (not to exceed $5) for each drug furnished outside the inpatient setting. For inpatient respite care, beneficiaries are liable for 5 percent of Medicare's respite care payment per day, not to exceed the Part A inpatient deductible, which was $992 per benefit period in 2007.

Medicare hospice payment limits ("caps")

The Medicare hospice benefit was designed to give beneficiaries a choice in their end-of-life care, allowing them to forgo intensive conventional treatment (often in inpatient settings), and die with dignity at home and with family according to their personal preferences. The inclusion of the Medicare hospice benefit in TEFRA was based in large part on the premise that the new benefit would be a less costly alternative to conventional end-of-life care (GAO 2004, Hoyer 2007).[3] To achieve this outcome, when the Congress established the hospice benefit it included two limitations on payments to hospices, or "caps."

The most visible cap limits the average annual payment per beneficiary a hospice can receive from the program. This cap was implemented at the outset of the hospice benefit to ensure that Medicare payments did not exceed the cost of curative care for patients at the end of life. If a hospice's total payments divided by its total number of beneficiaries exceed the cap amount, it must repay the excess to the program.[4] This cap is not applied individually to the payments received for each beneficiary but to the average of payments across all patients admitted to the hospice in the cap year. Medicare updates the payment cap amount by the medical expenditure category of the consumer price index for urban consumers but does not adjust it for geographic differences in cost. As a result, an agency serving a lower wage area can provide more days of care per beneficiary before reaching the cap than an agency serving a higher wage area.[5]

Because the per beneficiary payment cap is averaged across all of a hospice's patients, a hospice can stay below the cap by admitting the types of patients whose expected lengths of stay will enable the hospice's per patient payments to remain below the limit. Hospices are likely to exceed the cap when a disproportionately large share of their patients have longer stays that result in payments above the cap, or when a smaller share of their patients have very long stays that affect their aggregate average. The number of hospices exceeding the average annual payment cap has historically been low. The Government Accountability Office found that, between 1999 and 2002, fewer than 2 percent of hospices reached the cap (GAO 2004).

With rapid growth in Medicare hospice spending in recent years, this hospice cap is the only significant fiscal constraint on the growth of program expenditures for hospice (Hoyer 2007). This stricture has been called into question as more hospice providers have exceeded the Medicare payment limit since 2004.

Cost of hospice relative to curative care at end of life

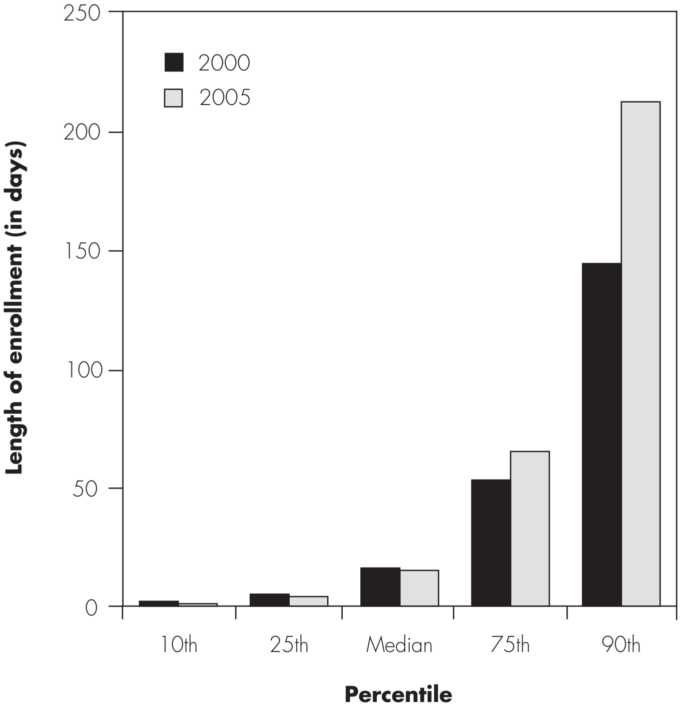
Research studies on the effects of hospice enrollment on Medicare spending have shown that beneficiaries who elect hospice incur less Medicare spending in the last two months of life than comparable beneficiaries who do not, but also that Medicare spending for beneficiaries is higher for hospice enrollees in the earlier months before death than it is for nonenrollees.[6] In essence, hospice's net reduction in Medicare spending decreases the longer the patient is enrolled, and beneficiaries with very long hospice stays may incur higher Medicare spending than those who do not elect hospice. Despite methodologic and conceptual difficulties intrinsic to assessing the effect of hospice use on Medicare spending at the end of life, several points of agreement have emerged:

- In the last month of life, Medicare spending is less for patients who use hospice than for patients who opt for conventional curative treatment.
- The spending differential occurs through the substitution of less costly hospice care for more costly hospital inpatient care.
- Medicare spending may be less for hospice patients than for comparable nonhospice patients in the fourth through second months before death, but patient-specific or other factors may affect the cost relationship in these months.
- Total Medicare spending for patients enrolled in hospice is higher than for patients not enrolled in each month beginning as early as the third month before death but definitively so by the sixth or seventh month before death.
- The hospice spending differential is not uniform across all terminal diseases.[7]
- Hospice use is more likely to result in lower Medicare spending for patients with shorter stays in hospice and for patients with conditions that typically require inpatient care at the end of life (e.g., cancer); hospice use results in higher spending relative to conventional end-of-life care for patients with long hospice stays or patients whose terminal diseases would normally incur lower levels of inpatient care (e.g., Alzheimer's disease).
- For the last year of life, there are no significant differences in Medicare spending for decedents who enrolled in hospice and those who did not.

Hospice can result in lower Medicare spending relative to conventional treatment at the end of life, but most of this reduction occurs through the reduced use of Part A services in the last month or two of life; hospice care in earlier months before death incrementally increases spending. Thus, from a fiscal perspective, the Medicare program has an incentive to ensure that the timing of the hospice admission reflects optimal use of the benefit. Although opinions based on existing studies vary about the specific point when hospice admission should occur, the six-month presumptive eligibility period appears to represent a reasonable upper bound. Should the program desire greater reductions in spending, eligibility could be

FIGURE 8–1

Long hospice stays are getting longer, while short stays persist



Note: Data are for decedent beneficiaries in both fee-for-service Medicare and Medicare Advantage.

Source: MedPAC analysis of 2007 100 percent Medicare Beneficiary Database file from CMS.

established at a shorter period of time, although reducing the benefit period may exclude beneficiaries from hospice because of difficulties in predicting death for certain illnesses (see Kinzbrunner 1998).

The per beneficiary payment cap serves as an external brake on hospice spending. For the period ending October 31, 2004, the cap limited hospice payments to an average of $18,963.47 per beneficiary (CMS 2007c). By contrast, spending per beneficiary in the last year of life for all Medicare services was $22,107 (KFF 2007). The hospice cap, designed to cover six months of hospice care, appears to be sufficient, on average, to cover 85 percent of the cost of curative care during the last year of life. (In practice, the way the cap is applied with respect to patients whose hospice use spans a cap year changes this relationship somewhat.) Increasing the cap amount, as some have suggested, would work against the financial interests of the Medicare program by moving the hospice benefit farther from the original congressional expectation that the benefit result in lower Medicare spending relative to conventional end-of-life care.

Trends in hospice utilization

In recent years, Medicare spending for hospice care has increased dramatically, and the CMS Office of the Actuary projects continued robust growth. Spending reached $10 billion in fiscal year (FY) 2007 and is expected to more than double over the next 10 years (OACT 2008). This spending increase is driven by greater numbers of beneficiaries electing hospice as well as longer hospice stays.

Hospice length of stay continues to increase

Most hospice users have hospice care episodes of less than six months, but the number of long hospice episodes is increasing. Between 2000 and 2005, the length of hospice episodes decreased slightly for patients with stays below the median, whereas the length of stays above the median substantially increased. In 2005, beneficiaries in hospice at the 90th percentile for length of stay had stays of 212 days, an increase of nearly 50 percent from 2000 (Figure 8-1).

CMS reports that, between 1998 and 2000, the national average length of stay for hospice patients was unchanged at 48 days; between 2000 and 2005, it increased by 40 percent to 67 days (CMS 2007a).[8] Similar trends occurred regarding growth in the percentage of patients who used hospice beyond the initial six-month benefit period. The National Hospice and Palliative Care Organization (NHPCO) documented an increase in the number of patients who received hospice care from their member organizations and who died after more than six months in hospice (NHPCO 2005). Between 2001 and 2004, the percentage of these hospice patients grew from 5.7 percent to 9.2 percent. The Commission currently estimates that, in 2000, more than 14 percent of beneficiaries who used hospice had election periods exceeding 180 days; by 2005, that share had grown to nearly 21 percent.[9]

Longer hospice stays consistent with growth in noncancer diagnoses

The length of a patient's enrollment in hospice is closely correlated with the patient's terminal diagnosis (Campbell et al. 2004, MedPAC 2006, Nicosia et al. 2006). From 2000 to 2005, CMS reported that the average number of hospice days per patient increased by an average annual

TABLE 8–2

Average length of hospice stays has steadily increased for selected high-volume diagnoses

	Average hospice days per patient							
Diagnosis	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**Percent change, 2000–2005**	**Average annual percent change, 2000–2005**
Alzheimer's disease	66	73	84	93	96	99	50.0%	8.4%
Senile dementia	57*	64*	69	78	84	85	49.1	8.3
Debility–not otherwise specified	51	56	59	65	70	73	43.1	7.4
Adult failure to thrive	32*	50*	63	70	76	78	143.8	19.5
Total – All diagnoses	48	51	57	63	65	67	39.6	6.9

Note: *Did not emerge into the top 10 diagnosis codes until 2002.

Source: CMS, "Medicare Hospice Data - 1998–2005." http://www.cms.hhs.gov/ProspMedicareFeeSvcPmtGen/downloads/HospiceData1998-2005.pdf. Accessed September 2007.

rate of 8.4 percent for patients with Alzheimer's disease, 8.3 percent for patients with senile dementia, 7.4 percent for patients with nonspecific debility, and nearly 20 percent for patients diagnosed with adult failure to thrive (Table 8-2). The CMS-reported average annual change in length of stay for hospice patients for the top 10 diagnoses over this period was just under 7 percent. These trends suggest that not only are the lengths of stay for patients with cerebral degenerative diseases and other nonspecific diagnoses higher than those for patients with more acute terminal diseases such as cancer but also that the lengths of stay for these patients are growing somewhat faster than for other patients.

The Commission also examined length of stay by patient diagnosis (Table 8-3, p. 212). In general, a relatively small number of disease categories account for all admissions to hospice. In 2005, cancer (both lung and other types) accounted for 36 percent of hospice admissions, heart failure and other circulatory diseases represented almost 20 percent of admissions, and Alzheimer's disease and other cerebroneurological disorders accounted for about 17 percent of admissions. Patients with Alzheimer's disease or senile dementia had longer stays than patients with cancer or cerebrovascular disease. Further, episodes of greater than 180 days typically represented a larger share of overall stays for these diagnoses than did stays for more acute diagnoses. About 25 percent of patients admitted to hospice with dementia had stays of more than 180 days, compared with just over 7 percent of patients with lung cancer.

The full import of these differences in utilization patterns is unclear. Given the greater difficulty in predicting death for diagnoses such as Alzheimer's disease (Lynn and Adamson 2003, Lynn et al. 1997), it is not surprising that the average length of stay is greater for these patients than for other hospice patients. However, we do not yet fully understand why the average length of stay is growing faster for these patients than for those with other diagnoses.

Characteristics of hospices exceeding the payment cap

We posited that differences in patient mix may help explain differences in length of stay and thus illuminate why some hospices exceed the cap while others do not. We wanted to assess whether this hypothesis had merit, or whether other factors—either specific to hospices that exceed the cap or to characteristics of their markets—could explain these patterns.

In 2006, MedPAC examined data from the four regional home health intermediaries (RHHIs), the contractors that process and pay Medicare hospice claims. We found that an increasing number of hospices exceeded the aggregate annual per beneficiary cap and hospices served by a single intermediary accounted for nearly all of the increase (MedPAC 2006).[10] (The 20 percent inpatient cap is rarely reached, according to data from the RHHIs.)

TABLE 8–3

Average days per hospice patient, by disease category, all diagnoses, 2005

Disease category	Number of patients	Days per patient: Mean	Days per patient: Median	Days per patient: 90th percentile	Percent of cases >180 days	Diagnosis share of total cases
Cancer (except lung cancer)	198,920	46	20	123	8.7%	25.6%
Circulatory diseases (except heart failure)	82,853	55	12	178	17.7	11.3
Lung cancer	81,474	44	19	115	7.4	10.4
Heart failure	61,194	63	21	186	18.7	8.4
Nonspecific debility	54,101	68	25	193	19.0	7.4
Alzheimer's and related diseases	42,756	86	35	252	29.3	6.2
Chronic airway obstruction, NEC	42,291	70	25	213	22.6	5.9
Unspecific symptoms/signs	39,337	69	26	197	19.6	5.4
Dementia	30,966	75	27	223	24.9	4.4
Organic psychoses	24,189	74	27	223	23.8	3.4
Genitourinary diseases	23,697	22	6	59	3.9	3.0
Nervous system diseases (except Alzheimer's)	19,175	81	35	236	26.2	2.7
Respiratory diseases	18,744	43	8	135	11.6	2.4
Other	14,740	46	12	141	12.8	1.9
Digestive diseases	11,932	37	11	105	8.2	1.5

Note: NEC (not elsewhere classifiable).

Source: MedPAC analysis of 2005 100 percent hospice standard analytical file from CMS.

The differences in shares of hospices reaching the cap across the four RHHIs raised the question of whether providers exceeding the cap were concentrated in certain regions or whether all the RHHIs consistently applied either hospice admissions guidance or the cap calculation payment methodology. Our analysis suggests that differences in the cap calculation methodology did not cause this pattern. Instead, provider characteristics, patient diagnoses, and market conditions were more closely correlated with the likelihood of a provider exceeding the cap. Ownership was a major factor; for-profit hospices are much more likely to exceed the cap than nonprofit hospices. Treating a disproportionate share of patients with diagnoses associated with longer lengths of stay, and market conditions, were also important factors.

The Commission used hospice-level data aggregated from hospice cost reports, CMS's Provider of Services records, and claims for 2002 through 2005 to create a model for calculating the cap on a hospice-specific basis. A summary of our results appears in Table 8-4.[11] The number of hospices exceeding the cap, although having grown steadily between 2002 and 2005, remained relatively small, with just under 8 percent of hospice providers exceeding the cap in 2005. Medicare payments over the cap attributable to these hospices represented 2 percent of total hospice payments in 2005, suggesting that they are smaller providers in terms of their Medicare patient load and revenues.

Table 8-5 lists the types and percentages of hospices that exceeded the cap for 2002 through 2005. Ownership status appeared to be a key factor in those hospices exceeding the cap; more than 84 percent of hospices that exceeded the cap in any year were for-profit entities. This pattern held regardless of whether the hospice was freestanding or provider based (most for-profit hospices are freestanding). In all years, 90 percent or more of the hospices that exceeded the cap were freestanding facilities.

Hospices exceeding the aggregate per beneficiary payment cap were more likely to have smaller patient loads than hospices that remained below the cap. Between 2002 and 2005, hospices with payments exceeding the cap had about half the patient loads as those that stayed below the cap. A lower patient count suggests that these hospices

TABLE 8–4

Share of hospices that exceeded Medicare's annual payment cap has steadily grown

	2002	2003	2004	2005
Number of hospices				
All	2,286	2,401	2,580	2,809
Above cap	60	98	150	220
Percent of hospices above cap	2.6%	4.1%	5.8%	7.8%
Total spending (in millions)	$4,517	$5,682	$6,897	$8,155
Payments above the cap				
Subject to recovery (in millions)	$28.2	$65.1	$112.3	$166.0
As a percent of overall Medicare hospice spending	0.6%	1.2%	1.6%	2.0%

Note: The cap year is defined as the period beginning November 1 and ending October 31 of the following year.

Source: MedPAC analysis of 100 percent hospice standard analytical file (claims) data, 2002–2005; Medicare hospice cost reports, 2001–2005; CMS Provider of Services file data, 2002–2005; and CMS Providing Data Quickly file.

had a smaller base across which to distribute the effects of patients with longer stays, putting them at greater risk of exceeding their payment limit. Freestanding hospices exceeding the cap had average lengths of stay significantly longer than below-cap hospices.[12] In 2003, the average length of stay for freestanding hospices that exceeded the cap was about 46 percent higher than that for hospices under the cap. By 2005, average length of stay for above-cap hospices was more than double that for below-cap hospices.

We also found that a hospice's case mix influenced whether it exceeded or remained under the cap but did not explain it entirely (Table 8-6, p. 214). For example, in 2005, cancers, which typically incur relatively shorter hospice lengths of stay, made up a greater share of cases

TABLE 8–5

Most hospices with payments exceeding Medicare's annual cap are freestanding for-profit agencies

	Percent of hospices							
	2002		2003		2004		2005	
Category	Above cap	All	Above cap	All	Above cap	All	Above cap	All
All	100%	2.6%	100%	4.1%	100%	5.8%	100%	7.8%
Urban	55.0	1.4	54.1	2.2	59.3	3.4	60.5	4.7
Rural	45.0	1.2	45.9	1.9	40.7	2.4	39.5	3.1
Nonprofit	13.3	0.3	12.2	0.5	13.3	0.8	8.6	0.7
For profit	85.0	2.2	84.7	3.5	85.3	5.0	89.1	7.0
Government	N/A	N/A	2.0	0.1	0.7	0.0	0.9	0.1
Other	1.7	0.0	1.0	0.0	0.7	0.0	1.4	0.1
Freestanding	93.3	2.4	91.8	3.7	92.0	5.3	92.3	7.2
Provider based	6.7	0.2	8.2	0.3	8.0	0.5	7.7	0.6

Note: N/A (not applicable). Percentages may not add to 100 due to rounding.

Source: MedPAC analysis of Medicare hospice cost report, claims, and Provider of Services data from CMS.

TABLE 8–6

Above-cap hospices had longer stays than below-cap hospices for every disease category, 2005

Disease category	Hospices below cap			Hospices above cap			Difference in ALOS, hospices above cap versus below cap
	Number of cases	Percent of total cases	ALOS (in days)	Number of cases	Percent of total cases	ALOS (in days)	
Cancer (except lung cancer)	194,089	27.2%	46	4,831	14.5%	68	49%
Lung cancer	79,560	11.2	44	1,914	5.8	54	23
Circulatory (except heart failure)	77,653	10.9	51	5,200	15.7	114	122
Heart failure	57,010	8.0	58	4,184	12.6	121	107
Debility, NOS	51,616	7.2	65	2,485	7.5	116	77
Chronic airway obstruction, NOS	39,796	5.6	67	2,495	7.5	119	76
Alzheimer's and similar disease	39,572	5.5	82	3,184	9.6	130	58
Unspecific symptoms/signs	36,770	5.2	66	2,567	7.7	107	62
Dementia	28,830	4.0	71	2,136	6.4	119	67
Genitourinary diseases	23,118	3.2	21	579	1.7	37	75
Organic psychoses	22,907	3.2	72	1,282	3.9	116	62
Respiratory diseases	18,300	2.6	42	444	1.3	90	116
Nervous system (except Alzheimer's)	18,179	2.5	78	996	3.0	134	73
Other	14,168	2.0	44	572	1.7	104	138
Digestive diseases	11,576	1.6	37	356	1.1	64	75
Total	713,144	100.0	54	33,225	100.0	105	93

Note: ALOS (average length of stay), NOS (not otherwise specified). Totals may not sum due to rounding.

Source: MedPAC analysis of 2005 100 percent hospice standard analytical file from CMS.

(38.4 percent) in hospices that did not exceed the cap than in hospices that exceeded it (20.3 percent). Conversely, diseases with typically long hospice stays made up a larger share of patient volume at above-cap hospices than in those whose payments remained below the cap. Alzheimer's disease, dementia, organic psychoses, and other neurological diseases, which typically have long lengths of stay relative to other conditions, made up almost 23 percent of cases at above-cap hospices in 2005, compared with only about 15 percent in below-cap providers. This pattern held true even with respect to the one non-neurological long-stay diagnosis shown—nonspecific chronic airway obstruction—which made up almost 8 percent of cases at hospices that exceeded the cap but fewer than 6 percent of cases at below-cap hospices.

Case mix alone did not explain a hospice's relationship to the cap. We found that hospices that exceeded the cap had longer lengths of stay than their below-cap counterparts for every disease category. Stays in hospices that exceeded the cap ranged from almost 23 percent longer for lung cancer to about 122 percent longer for circulatory diseases other than heart failure.[13] Even among diagnoses associated with longer stays, the average stay for above-cap hospice patients was much longer than that for the diagnosis across all hospices. In 2005, stays in below-cap hospices for patients with diagnoses associated with long stays were only 45 percent to 81 percent of those for similar patients in above-cap hospices. Ninety-three percent of hospice patients with Alzheimer's disease received care from hospices that did not exceed the cap in 2005.

In sum, above-cap hospices were more likely to be for-profit, freestanding facilities and to have smaller patient loads than below-cap hospices. They treated a larger share of patients with Alzheimer's disease and other neurological conditions than hospices that did not exceed the cap. Most importantly, hospice providers exceeding the cap exhibited significantly longer lengths of stay than

TABLE 8–7

In selected markets, share of cancer diagnoses is lower and average length of stay for cancer patients is higher in above-cap hospices, 2005

Geographic area	Share of cancer diagnoses: Hospices below cap	Share of cancer diagnoses: Hospices above cap	Share of cancer diagnoses: Percent difference	Average length of stay for cancer patients (in days): Hospices below cap	Average length of stay for cancer patients (in days): Hospices above cap	Average length of stay for cancer patients (in days): Percent difference
Rural areas						
Mississippi	39.2%	21.0%	–46%	54.2	78.7	45.3%
Alabama	34.3	17.9	–48	55.8	77.8	39.5
Oklahoma	32.0	22.5	–30	54.1	71.0	31.3
North Carolina	42.2	25.4	–40	52.8	80.5	52.5
Arizona	37.8	26.8	–29	42.2	56.1	33.0
MSAs						
Phoenix, AZ	33.2	15.0	–55	46.9	51.8	10.4
Oklahoma City, OK	30.1	20.8	–31	55.4	60.5	9.1
Tulsa, OK	31.3	17.2	–45	55.9	54.8	–2.1
Los Angeles, CA	41.2	27.2	–34	41.6	56.6	35.9
San Diego, CA	36.5	20.6	–44	48.5	50.6	4.2

Note: MSA (metropolitan statistical area).

Source: MedPAC analysis of 2005 100 percent hospice standard analytical file from CMS.

hospices remaining under the cap, even when controlling for patient mix.

Some hospice providers who have been affected by the cap assert that their patient mix reflects that of the communities where they operate—in other words, that their communities include disproportionate numbers of patients with terminal conditions likely to generate longer stays in hospice. They argue that, to the extent that patient mix includes a disproportionate number of patients with terminal diagnoses with typically long stays, the hospice cap unfairly penalizes them for serving patients in their community. To test this claim, we analyzed case mix (using share of cancer diagnoses as a proxy) and length of stay for the five urban areas and the five statewide rural areas with the largest numbers of hospices exceeding the cap (Table 8-7).

Two clear patterns emerge from this analysis. First, in each of the 10 areas, patients with a diagnosis of cancer represented a smaller share of patients in hospices exceeding the cap than those remaining under the cap. The share of cases represented by cancer in above-cap hospices was about 40 percent less than the share of cancer diagnoses in below-cap hospices. Second, in 9 of the 10 areas we studied, stays for cancer patients were longer at above-cap hospices than for those at below-cap hospices. These two patterns illustrate that admission patterns for hospices that exceed the cap do not necessarily mirror the mortality profile of their area. These hospices have consistently longer hospice stays—even in the case of patients with diagnoses that would be expected to have relatively short hospice stays.

We do not fully understand why lengths of stay are longer in some hospices, causing them to exceed Medicare's payment limit, whereas others in the same market do not. Hospices in the same market are generally served by a single Medicare fiscal intermediary and thus are subject to the same admissions guidance and cap calculation methodology, negating the hypothesis that variability in these factors among intermediaries would explain this phenomenon. Other market forces may drive hospices to incur long lengths of stay, such as whether a hospice is a new entrant in a market or an established provider. The number of Medicare beneficiaries per hospice provider in a given market may also be a factor. Other drivers of long lengths of stay could include a desire for patients to have the benefit of hospice care for a longer period at the end of life and a provider response to the profit incentives implicit

TABLE 8–8

Growth in Medicare-participating hospices suggests beneficiary access to care is growing

	2000	2002	2004	2005	2006	2007	Average annual percent change, 2000–2007
Total	2,240	2,310	2,662	2,887	3,069	3,253	5.5%
Nonprofit	1,193	1,167	1,175	1,189	1,192	1,205	0.1
For profit	725	822	1,148	1,330	1,496	1,660	12.6
Government/other	322	321	339	368	381	388	2.7
Voluntarily closed providers	74	41	41	40	42	41	N/A
New providers	88	111	249	266	222	226	14.4

Note: N/A (not applicable).

Source: CMS Providing Data Quickly query, https://pdq.cms.hhs.gov, accessed February 25, 2008.

in a per diem payment system. But regardless of the cause, the fact remains that above-cap hospices' patients have consistently longer hospice stays than below-cap hospices' patients for all conditions—even in the case of patients with diagnoses that would be expected to have relatively short hospice stays.

Effects of the cap on access to hospice care

It has been asserted that the growing number of hospice providers exceeding the cap affects Medicare beneficiaries' access to hospice care. Some hospice providers have indicated that the cap may force many hospices to go out of business or to deny or defer access to eligible noncancer patients (NAHA 2006). We evaluated access in terms of the number of hospice providers (both nationally and by state) and the number of patients using hospice (including various demographic strata) and found no evidence to suggest that the growing number of providers exceeding the Medicare limit on payments has affected patients' access to hospice care.

Supply of providers

We examined the supply of hospices, including new providers and those that discontinued participation in the program, to assess whether the caps were affecting the number of hospices available to Medicare beneficiaries (Table 8-8). Given the lag in the time it takes the RHHIs to calculate the cap, the effects of hospices exceeding the cap in 2004 and later years would not necessarily have shown up in 2005 data, but any effects of the earlier years' application of the cap should be reflected in the later years' data.

Between 2005 and 2007, the overall number of hospices grew by more than 360 providers, or nearly 13 percent. Over this time, the number of nonprofit hospices remained relatively flat, growing by about 1 percent, and the number of for-profit providers—the ones disproportionately affected by the cap—grew by nearly 25 percent (not shown in Table 8-8). In the aggregate, the supply of providers does not appear to have been adversely affected during the most recent period of growth in the number of providers reaching the cap.

The number of hospices that voluntarily stopped participating in Medicare has remained constant at about 40 providers annually since 2002. Our data do not distinguish between closures and mergers, so it is possible that some of these entities merged during this time and continue to provide end-of-life care to Medicare beneficiaries. Nor do these data allow us to attribute causality of closures to the effects of the hospice cap.[14] Additionally, the number of new hospices participating in Medicare continues to increase, well exceeding the number of hospices exiting the market. In 2007, more than five times as many new hospices began participating in Medicare as left the program.

With respect to the supply of providers, we examined growth in the number of hospices by state over time. The results varied, with some states experiencing extremely robust growth in the number of hospices (e.g., Alaska and Utah, with an average annual growth of more than 20 percent between 2000 and 2006), whereas other states experienced either no growth (Hawaii, Kentucky, Maryland, North Dakota, plus the District of Columbia) or very slight declines in the number of hospice providers (West Virginia, New York, and South Dakota). The three states with the highest share of hospices reaching the cap in 2005 (Alabama, Mississippi, and Oklahoma) were among the 10 states with the highest rates of growth in the number of hospices between 2000 and 2006, with average annual increases in the number of providers ranging from about 11 percent to almost 17 percent during this time.[15] Each of these three states had more than twice as many hospices as New York and Florida, states that have much larger numbers of Medicare beneficiaries, and that also have certificate-of-need criteria governing the establishment of hospices. Further analysis may be needed to fully understand the myriad relationships between growth in the number of hospices, variation in length of stay by state or within states, the number of hospices reaching the cap in any given state, and state certificate-of-need laws.

Recognizing that raw counts of hospices per state are not the best measure of access, given that a hospice's capacity may vary, we also measured the number of hospices per 10,000 beneficiaries and the number of Medicare hospice users as a percentage of total Medicare decedents. Of the 10 states with the highest hospice access (as measured by hospice use as a percent of total decedents), five also had among the highest rates of growth in the number of hospices between 2000 and 2005. Five of the 10 also had the highest access as measured by hospices per capita, and 6 had among the highest rate of hospices exceeding the cap (Table 8-9). Colorado and Florida had relatively high access to hospice in terms of hospice users per decedent, but relatively few hospices per Medicare beneficiary. (Access in Utah and Arizona, as measured by hospice users per decedent, was at a level generally recognized by the industry as the highest practical level of hospice utilization.)

Volume of services

Growth in the volume of hospice services is another indicator that access to hospice care, in the aggregate, has not declined in recent years. The number of unique beneficiaries using hospice increased by an average annual rate of 10 percent between FY 1995 and 2005, reaching nearly 870,000 beneficiaries in FY 2005 (Figure 8-2, p. 218). Our analysis indicates additional growth to more than 913,000 beneficiaries in calendar year 2006. This increase—just above 7 percent—is lower than the prior fiscal year trends reported by CMS (an average annual increase of roughly 11 percent over the last five fiscal years) but substantially exceeds the increase in Medicare enrollment (2 percent to 3 percent) over this period.[16]

Growth in hospice use was more rapid for patients with Alzheimer's disease and other generalized cerebroneurological disorders associated with long hospice stays than for other terminal diseases such as cancer and congestive heart failure. This growth suggests that the cap has had no discernible effect on hospices' willingness to provide care for these patients; on the contrary, there appear to be financial incentives in Medicare's hospice payment system that make such patients attractive, despite the potential adverse effects of exceeding the cap.

Hospice use trends by demographic groups

Between 2000 and 2005, growth in hospice use occurred not only in the aggregate but also for all but one

TABLE 8–9

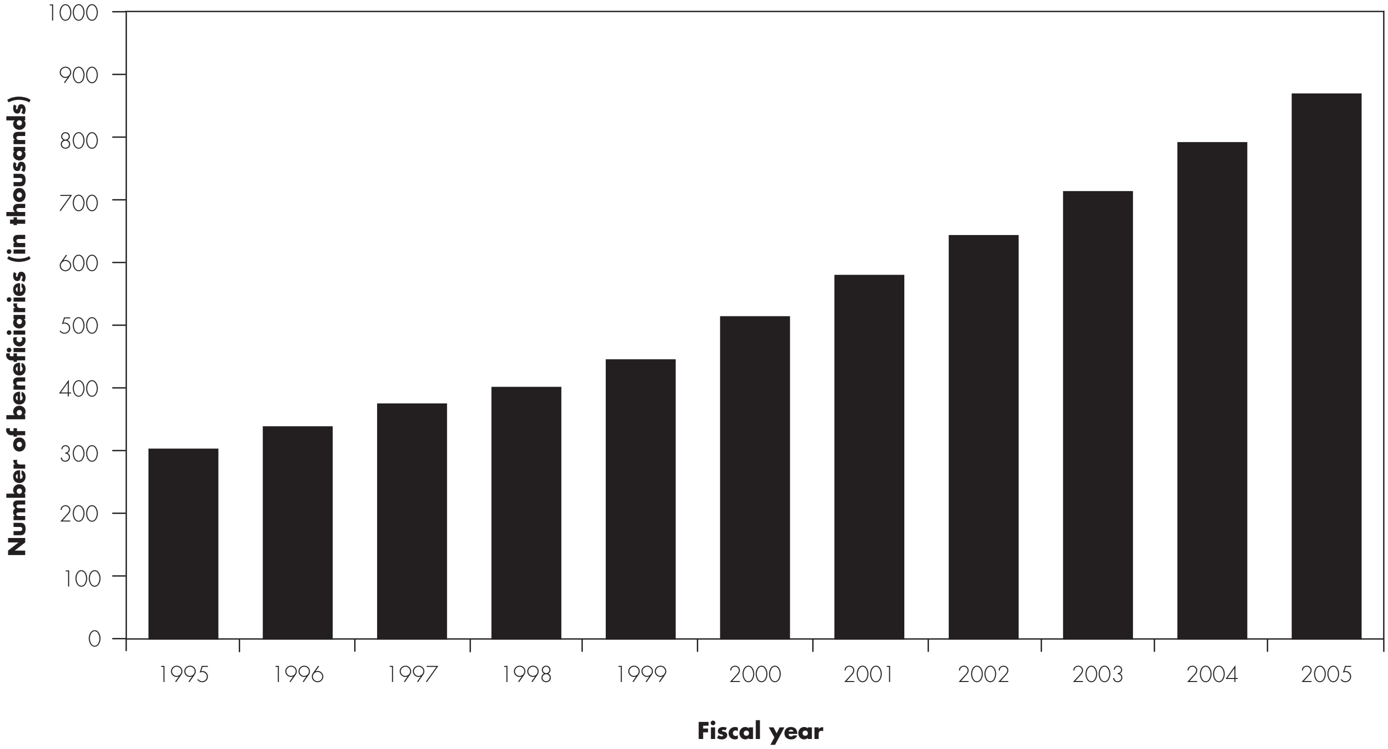
Cap does not appear to be affecting hospice access, 2005

State	Hospices per 10,000 beneficiaries	Percent of hospices above the cap	Medicare hospice users as a share of decedents
Utah	2.4	21.2%	70.2%
Arizona	0.7	20.0	67.6
Oklahoma	2.9	28.3	60.0
Colorado	0.9	0.0	57.4
Florida	0.1	4.9	57.3
Alabama	1.5	41.7	56.5
New Mexico	1.6	17.9	56.3
Oregon	1.0	2.1	53.2
Mississippi	2.3	36.0	51.5
Kansas	1.3	6.1	50.8

Source: CMS Providing Data Quickly query, https://pdq.cms.hhs.gov, accessed October 18, 2007; MedPAC analysis of 100 percent Medicare hospice standard analytical file from CMS; and Medicare hospice cost reports from CMS.

FIGURE 8–2

Growth in hospice use tripled in recent years



Source: CMS 2007. http://www.cms.hhs.gov/ProspMedicareFeeSvcPmtGen/downloads/FY05update_hospice_expenditures_and_units_of_care.pdf

demographic group of Medicare decedents.[17] We analyzed changes in the percent of Medicare decedents who had used hospice between 2000 and 2005 by sex, race, age, and Medicare eligibility.

In 2000, about 23 percent of Medicare decedents died while covered by hospice, with this share increasing to about 34 percent in 2005. Between 2000 and 2005, hospice use by Medicare beneficiaries increased by 50 percent, compared with a 7 percent increase in Medicare enrollment in the period. Among the highlights of our findings, of Medicare beneficiaries who died while covered by hospice:

- Growth in hospice use was higher for females than for males.
- Hospice use by white and black beneficiaries increased faster than for beneficiaries of Hispanic and Asian heritage.
- Hospice use by Native American Medicare beneficiaries doubled between 2000 and 2005.
- Hospice use grew fastest for the oldest Medicare beneficiaries, aged 85 and older; this group now has the highest rate of hospice use of any Medicare age group.

Across all measures, hospice use by Medicare decedents who had been enrolled in managed care plans was higher than those in fee-for-service, but the gap narrowed between 2000 and 2005, with growth rates for fee-for-service hospice use higher than those for managed care. The utilization increase across all beneficiary groups suggests that access to hospice care was not affected by the cap during this time.

Incentives in Medicare's hospice payment system

Our assessment of hospice margins suggests that, in the aggregate, Medicare payments to hospices are sufficient, an assessment shared even by some hospices subject to the cap (Armstrong 2006). Aggregate margins partially reflect providers' ability to manage a mix of patients, some of whom incur costs greater than the reimbursement and some of whom have care that costs less. However, these aggregates also reflect considerable underlying variation in a number of aspects, including ownership type, provider affiliation, and geography. These margins reflect differences in the provision of hospice care across the country, which may not be related to the specific clinical needs of hospice patients (Iwashyna et al. 2002).

Some evidence suggests that the cost of hospice care does not vary by patient diagnosis (MedPAC 2006, Nicosia et al. 2006). However, it is worth questioning this premise, given the relationships between diagnosis and length of stay, and corresponding clues about the variation in types of services used by hospice patients either by length of episode (Cheung et al. 2001) or by terminal disease (Mor and Birnbaum 1983). If per patient resource use varies, either over time or by patient diagnosis, Medicare's payment system, which does not account for differences in patient diagnosis or in costs by diagnosis relative to nonhospice care, will pay too much for some patients and too little for others. This is likely to create financial incentives for hospice providers that are not related to and may even be in conflict with hospice patients' needs. Data do not exist to assess the accuracy of Medicare hospice payments at the level of specific diagnoses, but we can evaluate payment accuracy in the aggregate and identify related payment incentives.

Incentives under Medicare's hospice payment system

The Commission's previous analyses of visit-level data from a large national for-profit hospice chain suggested that hospice episodes are more resource intensive at the beginning and at the end of episodes (MedPAC 2006, Nicosia et al. 2006). These findings on cost trends across hospice episodes, consistent with those of other health services researchers (Carney et al. 1989, Fitch and Pyenson 2003, Huskamp et al. 2001), suggest that Medicare's hospice payment system "might now create incentives for providers to lower their average daily costs by seeking patients with longer lengths of stay" (Nicosia et al. 2006). In 2001, actuaries from Milliman USA demonstrated that longer stays were more profitable. Analyzing data from 1998 and 1999, a period when average hospice length of stay was decreasing, hospices incurred pronounced deficits under Medicare for stays of less than 21 days (Cheung et al. 2001). Beyond 21 days, the magnitude of deficits declined, and the stays became profitable. Virnig and colleagues (2004) pointed to declining lengths of stay as a source of "financial difficulties" for small rural hospices, implying that longer stays were more profitable, based on utilization data from 1998 and 1999.

In their filings with the Securities and Exchange Commission (SEC), publicly traded for-profit hospice chains also generally acknowledge the nonlinear cost function of resource use within hospice episodes. VistaCare notes that "our profitability is largely dependent on our ability to manage costs of providing services and to maintain a patient base with a sufficiently long length of stay to attain profitability," and that "cost pressures resulting from shorter patient lengths of stay … could negatively impact our profitability" (HCSM 2004). Similarly, Odyssey HealthCare acknowledged in their 2004 annual SEC filing that "length of stay impacts our direct hospice care expenses as a percentage of net patient service revenue because, if lengths of stay decline, direct hospice care expenses, which are often highest during the earliest and latter days of care for a patient, are spread against fewer days of care" (Odyssey HealthCare 2004). Odyssey HealthCare's average length of stay increased from 79 days in 2004 to 86 days in 2006, with no apparent change in the mix of patients it treated (Odyssey HealthCare 2007).

The most explicit analysis of the relationship between hospice profitability and length of stay is the study by Lindrooth and Weisbrod published in 2007. They hypothesized that this relationship could be observed in the differences in patient selection between for-profit and nonprofit hospices (Lindrooth and Weisbrod 2007). They found that patients at for-profit hospices were more likely to be enrolled in managed care and had fewer surgical procedures before admission to hospice than patients at nonprofit religious hospices. The mix of patients in the two groups of hospices differed significantly beyond what would have been expected due to random variation. Nonprofit religious hospices had a larger share of patients with cancer diagnoses (generally short-stay patients)

TABLE 8–10

Hospice Medicare margins, 2001–2005

Category	Percent of hospices, 2005	2001	2002	2003	2004	2005
All	100%	1.0%	3.1%	4.5%	3.2%	3.4%
Urban	64	1.4	3.6	4.9	3.6	3.4
Rural	36	–1.8	0.1	2.5	0.0	3.3
Nonprofit	48	–4.4	–3.7	–2.9	–3.6	–2.8
For profit	43	12.0	14.6	15.9	12.4	11.8
Government*	7	–16.4	–17.9	–26.0	–11.9	–16.2
Freestanding	59	5.6	6.8	9.0	6.7	6.3
Provider based	41	–10.5	–7.6	–8.9	–7.5	–5.6
Percent of hospices						
Below the cap	91	N/A	2.1	3.3	1.8	1.5
Above the cap (including overpayments)	9	N/A	30.1	23.0	17.4	18.9
Above the cap (net of overpayments)	9	N/A	13.3	2.1	–4.6	–2.9
Patient volume (quintile)						
1	20	–12.6	–6.7	–1.4	–1.0	–0.2
2	20	–4.5	–1.4	–3.1	0.5	5.0
3	20	–0.4	3.4	3.8	2.6	3.0
4	20	–1.8	3.3	2.9	3.1	5.5
5	20	3.0	3.8	6.1	3.7	2.8
Length of stay (decile)						
1	10	–4.1	–6.6	–2.3	–9.9	–6.7
2	10	–1.1	–3.1	–1.6	–2.0	–4.6
3	10	1.0	–1.6	4.1	–2.1	–1.4
4	10	1.0	3.0	6.8	0.8	2.5
5	10	2.5	1.8	8.4	9.2	8.2
6	10	8.7	9.9	6.7	9.8	7.1
7	10	8.8	12.0	14.7	13.0	11.0
8	10	8.9	16.4	14.5	13.4	12.0
9	10	14.8	15.5	17.3	11.7	18.4
10	10	29.9	26.1	25.0	21.6	14.4

Note: N/A (not applicable). Percentages by ownership do not sum to 100 because "other" ownership types are excluded from this table.
*Government-owned providers operate in a different context from other providers, so their margins are not necessarily comparable. Margins for all categories include cap overpayments, except where specifically indicated; subtracting overpayments would reduce reported margins, especially for for-profit hospices.

Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytical file, and Medicare Provider of Services data from CMS.

than for-profit hospices, whereas for-profit hospices had much larger shares of long-stay patients. Lindrooth and Weisbrod linked the utilization patterns to hospice profitability, stating that noncancer diagnoses "have the longest expected lengths of stay, and therefore, the greatest profitability" (Lindrooth and Weisbrod 2007). They asserted that the differences in patient mix are directly attributable to affirmative practices on the part of for-profit hospices, such as selective admissions based on identifiable patient characteristics. Although their argument is compelling and makes logical inferences (i.e., for-profit hospices will engage in the most profitable practices), they did not confirm their assertion through an analysis of hospice margins.

Evidence of hospice profitability under Medicare

A limited number of health services research and government studies have estimated hospices' historical margins that range from as low as 2 percent to as high as 52 percent (GAO 2004, Kidder 1998, McCue and Thompson 2005). Financial analysts have estimated margins for the three largest publicly traded hospice firms (Vitas, Odyssey, and VistaCare) that ranged from 6 percent to nearly 15 percent in 2006 (Wharton 2006).

Additional indicators of hospice profitability can be found in the Securities and Exchange Commission (SEC) filings of publicly traded hospices. Among these are Vitas (a subsidiary of Chemed), Odyssey HealthCare, VistaCare, Manor Care, and Beverly Enterprises.[18] Whereas these margin estimates reflect revenues and costs for all patients (not just Medicare), Medicare accounts for the largest share of hospice revenue, exceeding 90 percent. In its most recent annual filing with the SEC (Chemed 2007), Vitas reported a pretax profit margin of about 7 percent for calendar year 2006. VistaCare reported operating losses of 5 percent in FY 2006, and 3 percent in 2007, partly on the basis of costs attributable to a corporate restructuring and other factors, including ongoing cap liability (VistaCare 2007). VistaCare has reduced its cap exposure each year since 2004, and it estimates a further reduction in 2007. The third major for-profit hospice chain, Odyssey HealthCare, reported pretax operating margins of 7.8 percent for calendar year 2006, down slightly from 8.8 percent in 2005. As part of a management strategy that includes an aggressive acquisition program, Odyssey HealthCare has an open offer to acquire all outstanding shares of VistaCare. Like VistaCare, Odyssey HealthCare has begun to reduce its exposure to cap overpayments, which peaked in 2006 at just over $14 million as estimated by the company, up from just under $8 million in 2005. Analysts now estimate that Odyssey HealthCare may generate margins of 11 percent to 12 percent over the next several years (Deutsche Bank Equity Research 2008). ■

Because Medicare's payment system makes a fixed payment for each day of care regardless of its position in the course of an episode, a financial incentive exists for hospice providers to enroll patients who are likely to have longer stays. To an extent, this relationship is implicit in the growth in for-profit hospices since 2000, a period of time when length of stay also increased. Partially counterbalancing this incentive, the Medicare aggregate per beneficiary payment cap provides a strong inducement for providers to be judicious in their admissions and admit patients who meet the presumptive eligibility requirements.[19]

Hospice providers' payments and costs

To date, there has been no systematic evaluation of hospice providers' payments and costs, although some evidence exists to suggest that hospices have generally performed well financially under Medicare (see text box). Given the absence of comprehensive data on hospice margins, we developed our own estimates of Medicare hospice margins using Medicare claims and cost report data for the period 2001 to 2005. Overall, hospices' Medicare margins have ranged from about 1 percent to 4.5 percent since 2001 and were 3.4 percent in 2005 (Table 8-10). These totals, however, mask pronounced differences in margins by hospice provider type.

Between 2001 and 2005, freestanding hospices had Medicare margins ranging between about 6 percent and 9 percent, in the aggregate, with a margin of 6.3 percent in 2005. In contrast, provider-based hospices' margins were negative over the period of analysis, ranging from –10.5 percent in 2001 to –5.6 percent in 2005.

As might be expected, for-profit hospice providers in general had significantly higher margins than nonprofits. For-profit hospice margins ranged from 12 percent to about 16 percent between 2001 and 2004, dropping slightly to 11.8 percent in 2005. Over the same period, nonprofit hospice providers' margins were between –2.9 percent and –4.4 percent, ending at –2.8 percent in 2005.[20]

We also examined margins as a function of hospice geography. The relationship between urban and rural hospice Medicare margins has varied over the five years

TABLE 8–11

Some above-cap hospices are profitable only because of overpayments, but a large share are profitable net of overpayments

Category	2002	2003	2004	2005
Margin (including overpayments)	30.1%	23.0%	17.4%	18.9%
25th percentile	9.7	11.6	3.9	4.7
Median	29.4	23.6	16.3	17.4
75th percentile	39.4	35.4	29.8	28.0
Mean payment-to-cost ratio				
With overpayments	1.40	1.34	1.26	1.25
Without overpayments	1.14	1.07	0.99	0.95

Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytical file, and Medicare Provider of Services file data from CMS.

we examined. Margins for urban facilities were generally positive. Urban hospices' margins are roughly 2.5 to 3.5 percentage points higher than those for rural hospices, although this differential narrowed to only 0.14 percentage point in 2005.

Patient volume seemed to have a general, but not linear, effect on hospices' Medicare margins. In each year, hospices in the lowest quintile of patient volume had negative margins, and hospices in the highest quintile had positive margins. In this regard, the patterns (but not the absolute values) we observe for hospice margins are not dissimilar from those exhibited by freestanding home health agencies, where lower volume providers have somewhat lower margins than higher volume agencies (MedPAC 2007). In general, neither hospice nor home health agencies have large capital infrastructures, unlike institutional providers for which it is financially beneficial to distribute costs over as many patients, visits, or discharges as possible (roughly 20 percent of hospice providers own and operate inpatient or residential facilities, however). As a result, variation in hospice margins as a function of the number of patients may be less pronounced than might be the case with institutional providers.

We also calculated Medicare hospice margins as a function of whether hospices exceed the aggregate per beneficiary payment limit. As a group, hospices that exceeded the cap had the highest Medicare margins of any category of hospices, from just over 30 percent in 2002 falling to nearly 19 percent in 2005 (Table 8-11). Margins at the 25th percentile of the distribution were nearly 4.7 percent in 2005, whereas hospices at or above the 75th percentile had margins of 28 percent or higher.

These margins include the overpayments that hospices must return to the Medicare program. To assess the impact of returning the overpayments on above-cap hospices' profitability, we calculated payment-to-cost ratios for above-cap hospices with and without the excess payment amounts. We found that excluding the overpayments had a major impact on profitability. In 2004 and 2005, excluding overpayments resulted in a shift of payment-to-cost ratios from 1.25 to below 1.0, indicative of a negative margin.

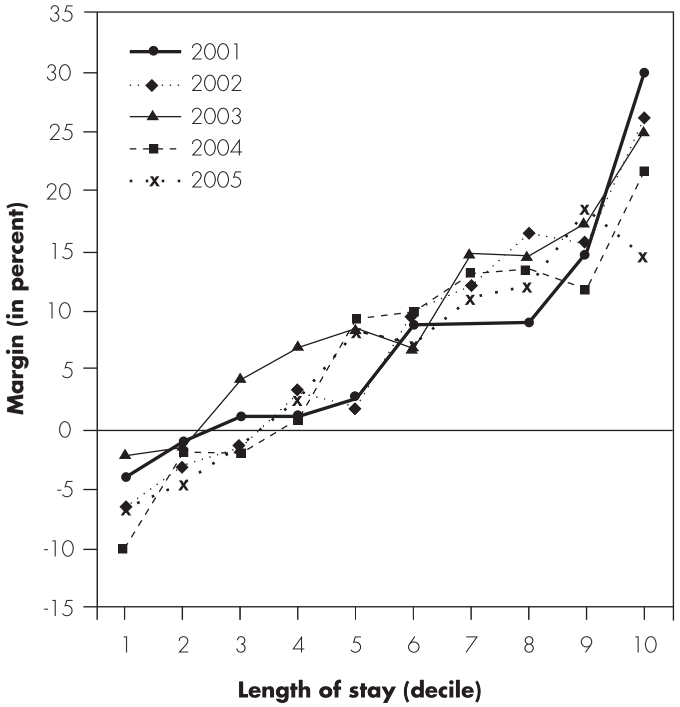
Length of stay in hospice was by far the dominant driver of whether a hospice exceeded the cap. Hospices that exceeded the cap had longer lengths of stay than below-cap hospices, and for-profit hospices had lengths of stay that were 45 percent longer than those of nonprofit providers. Given the relationship between long length of stay and profitability under Medicare's payment system for hospice, it is not surprising that hospices that exceed the cap have high Medicare margins before they return the overpayments.

We evaluated the relationship between margins and hospice length of stay directly. To do this, for each year from 2001 to 2005, we categorized the freestanding hospices in our database into length-of-stay deciles, using length of stay as reported on their cost reports.[21] In each year, hospices in the lowest length-of-stay deciles had the smallest margins, and hospices in the highest deciles had the highest margins (Figure 8-3). This relationship was nearly, but not quite, linear—that is, the longer the length of stay, the greater the Medicare margin. An exception to this trend occurred in 2005, when hospices in the highest length-of-stay decile exhibited lower margins than those in the preceding decile. As noted earlier, the cap, by serving to check length of stay, may thus limit hospices' profitability. For example, large hospice chains indicate that, when their hospices exceed the cap in one year, they take actions to reduce their exposure in later years.

Growth in the number of hospice patients with long stays is partly a consequence of more service to noncancer patients such as those with a diagnosis of Alzheimer's disease, a population that historically has been underrepresented in hospice compared with patients diagnosed with cancer. However, the provision of hospice care may also be driven partly by Medicare's payment system, under which longer hospice episodes are more profitable. This profit incentive may operate in direct conflict with Medicare's interest in ensuring that the hospice benefit provide a less costly alternative to traditional end-of-life care.

FIGURE 8–3

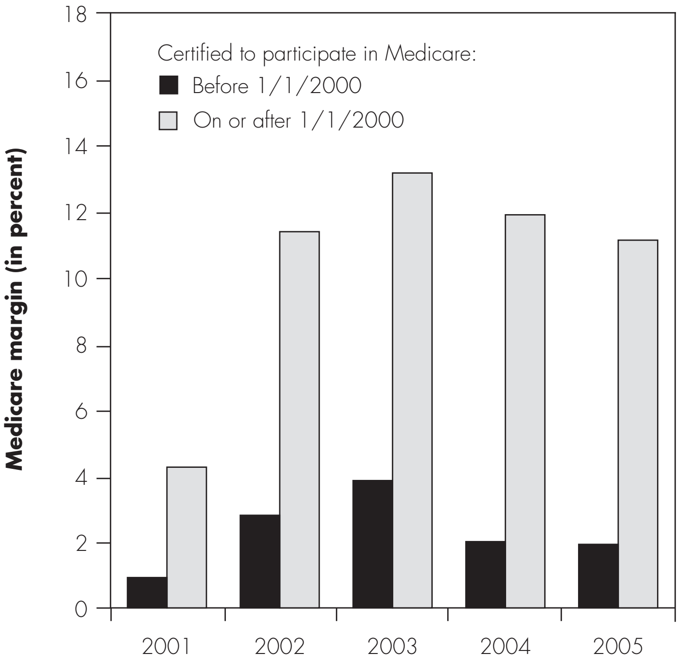
Hospice Medicare margins increase with length of stay



Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytical file, and Medicare Provider of Services data from CMS.

FIGURE 8–4

Hospice Medicare margins are larger for new hospices



Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytical file, and Medicare Provider of Services data from CMS.

Some in the hospice community have contended that length of stay may be correlated with the length of time a hospice has participated in the Medicare program. They argue that more established hospices in a market have developed relationships with physicians and referral sources in their market that permit them to identify and admit patients whose diagnoses are likely to incur shorter lengths of stay (e.g., cancer). As a result, new entrants in a market would be left with longer stay patients (e.g., patients with dementia, Alzheimer's disease, and other nonspecific diagnoses), who are ostensibly less desirable from the hospices' perspective because they can push hospices closer to the cap. Thus, the argument goes, the cap discourages hospices from admitting noncancer patients and penalizes the hospices that admit them (NAHA 2006).

We found that hospices that began participating in Medicare in 2000 or later had consistently and substantially higher margins than those participating in Medicare before 2000 (Figure 8-4). These margins include those for above-cap hospices before the return of overpayments to Medicare.

The higher margins observed for the newer hospice entrants is consistent with the growth in the number of for-profit hospices, which tend to enroll larger shares of long-stay patients—those who appear to be more profitable under Medicare's payment system, despite the cap on aggregate annual Medicare payments.

These margins may not provide a full picture of hospices' financial status. Nonprofit hospices derive revenues from philanthropic donations, which are an integral part of their operations and mission; these revenues are not consistently reported on Medicare cost reports. Such revenues may help offset the generally negative margins we observe for nonprofit hospice providers. Additionally, as is the case with hospital-based skilled nursing facilities, which tend to have high negative Medicare margins, hospitals may find it desirable to operate hospices, even in light of negative hospice margins. Harrison and colleagues (2005) found that hospitals that operated hospice programs had higher return on assets and higher hospital occupancy rates, as well as shorter lengths of stay, than hospitals without hospices. We will continue to evaluate these data to assess the full impact of Medicare payments on the hospice industry as we work toward developing specific policy proposals to address deficiencies in Medicare's hospice payment system.

For-profit hospices have lower costs per day than nonprofits

We examined hospice costs to gain insights on the differential margins between hospices as a function of ownership or provider affiliation. Much of the difference in margins stems from the fact that for-profit hospices have lower unadjusted costs per patient day than do nonprofit hospices. Similarly, provider-based hospices' unadjusted costs were higher than those of freestanding hospices. We do not have information on the reason for differences in costs per day among hospice providers. For-profit hospices' costs per day may be lower than those of nonprofit hospices because they are more efficient, because they provide a different mix of services, or because they provide fewer services over the course of a hospice episode of care. Because hospices are not yet required to report information on the number, type, and duration of visits and services they provide, data do not exist to fully answer such questions.

Medicare has insufficient information on the hospice care it purchases

The rapid growth in Medicare spending for hospice care—exceeding $10 billion in 2007—has brought a greater degree of scrutiny to the benefit. Yet, beyond counts of beneficiaries, the number of hospice episodes, and the number of days of service under each of the four types identified for purposes of Medicare payment, the program has virtually no information on the hospice care it purchases, in terms of either the specific services provided or the quality of care obtained. CMS will begin requiring hospices to report some of this information on their claims beginning in July 2008 and is in the early stages of developing quality measures for hospice.

Information on services paid for under hospice

Under the Medicare hospice payment system, hospices bill Medicare for days of service at the appropriate level of care for as long as a patient is under their care. Medicare pays these daily rates regardless of whether a hospice provides a visit on a given day, although some items and services may be provided beyond the scope of a single visit. Medicare historically has not required that hospices report detailed information on the types of visits provided. The Commission and others have highlighted the need for CMS to collect data on the number, frequency, and duration of hospice visits and information on who provides these visits (MedPAC 2006, see also GAO 2004).[22]

Beginning July 1, 2008, CMS will require hospices to report the number of visits furnished by nurses, home health aides, social workers, physicians, and nurse practitioners (when they serve as the hospice enrollee's attending physician) (CMS 2007b). Hospices were supposed to have been able to submit this information voluntarily beginning January 1, 2008, but software problems have prevented claims from being accepted into the system, and these problems will not be resolved until early in the summer of 2008.

The hospice community has criticized the CMS data collection effort. The industry's chief concern relates to the required content; specifically, they note that these visit types do not reflect the full spectrum of personnel who provide hospice care and that, by not requiring hospices to report time increments for visits, there is no way to differentiate a 2-hour nursing visit from one lasting only 15 minutes. Additionally, hospices are concerned about the requirement that visits be counted for care provided in inpatient facilities under contract with the hospice, indicating that it is almost impossible to report how many times a hospital staff member enters the patient's room and performs a "medically necessary" activity. The industry has also expressed concerns about the CMS timeline for requiring this new level of reporting. The organizations representing the hospice community have volunteered to assist CMS in defining and collecting more comprehensive data on hospice visits. CMS has responded that the new requirement is only a first step in collecting data, with the first round intended to minimize hospices' reporting burden, and that additional phases of data collection are planned. Even given the resolution of concerns surrounding the initial effort, information from this requirement will likely not be available until mid-2009 at the earliest.

Few studies on the composition of hospice episodes exist in the health services research literature. Miller and colleagues (2003) evaluated visit-level data from a large national hospice chain to assess whether the provision of care differed for patients in nursing homes. They found no significant difference in provision of visits according to patients' residence but noted that patients with short stays were more likely to have a visit intensity (i.e., visits per unit of time) above the sample median, whereas patients with long stays (more than 181 days) were likely to have a visit intensity below the median.

Analysis of visit data from a large, for-profit national hospice chain

In the absence of systematic data on hospice utilization, we consulted other sources. In 2005 and 2006, the Commission contracted with RAND Health to analyze visit-level data from a large national for-profit chain. The analysis found that, although some diseases required more visits than others, overall patient diagnosis was a generally poor predictor of service use (MedPAC 2006, Nicosia et al. 2006).

In the fall of 2007, the same hospice chain provided the Commission with additional visit-level information, reflecting their experience with more than 250,000 Medicare patients at 44 hospices in 17 states between 2002 and 2007, or roughly 5 percent of all Medicare beneficiaries who received hospice care during those years. Most of their patients were in Florida, Texas, and California. The data include a patient's visit-level variables, such as visit discipline type, visit location, and visit start and end times, which we aggregated to construct individual hospice episodes. This analysis illustrates the benefits the federal government and others may derive from visit-level hospice data and the extent to which the data might be used to make informed improvements to Medicare's hospice program.

Consistent with trend data from broader analyses of Medicare's hospice program, data for this large chain indicate that its Medicare patient mix has shifted over time to include a greater share of patients with noncancer diagnoses. With this change in patient mix, average length of stay for Medicare patients served by this chain increased between 2002 and 2007 from 44 days to more than 83 days. The increase was largely driven by particular types of noncancer patients. From 2002 to 2007, the average length of stay increased from approximately 60 days to 138 days (130 percent) for neurological patients, from 66 days to 113 days (71 percent) for patients with nonspecific debility, and from 38 days to 73 days (92 percent) for all other noncancer patients.[23] By contrast, the average length of stay for cancer patients increased during this time from approximately 38 days to 46 days (21 percent).

Visit frequency data from the chain in our analysis showed that, from 2001 to 2007, patients had an average of 1.1 visits per day in the first 5 days of their hospice episode and 1.6 visits per day in the last 5 days, but they had 0.82 visit per day across their entire episode. This result is consistent with previously reported findings that hospices' costs are higher at the beginning and end of episodes and lower in the interim period. Medicare's per diem–based payments do not reflect this nonlinear trend in visits but instead provide a steady revenue stream over the course of an episode, independent of the number of visits patients receive each day. Thus, a hospice can increase its profit by increasing the number of more profitable interim days of an episode relative to the number of less profitable days.

The content of patient episodes, such as the average number of visits patients receive per week and the types of staff providing those visits, also affects profitability. In our analysis of the hospice chain's patients, both of these metrics generally correlated with the patient's terminal diagnosis. Patients with diagnoses associated with longer hospice stays, such as neurological patients, had less intensive treatment regimens than shorter stay patients (Table 8-12, p. 226).

From 2002 to 2007, the number of visits cancer patients received per week remained relatively constant at approximately 6.1 visits per week, but the number of

TABLE 8–12

At one large for-profit chain, the number of visits per week declined for Medicare patients with most disease types

Disease category	2002	2007	Percent change
Cancer	6.1	6.2	1.0%
Neurological	5.8	5.5	–5.5
Nonspecific debility	5.5	5.3	–2.8
Cardiovascular	6.0	5.2	–12.5
All other diseases	6.2	5.6	–10.0

Source: MedPAC analysis of data from a large national chain hospice provider.

visits per week noncancer patients received declined. For example, during this period, the average number of visits per week for neurological patients declined slightly from an average of 5.8 visits per week to 5.5 visits per week. Average visits per week for patients with nonspecific debility also declined slightly from 5.5 to 5.3. Declines in visits per week were most pronounced for patients with all other noncancer diagnoses, from about 6.1 visits to 5.4 visits, a decline of 13 percent. These declines in average visits per week are consistent with our other findings suggesting that long-stay patients may be more profitable for hospice agencies. Declines in visit intensity also may result from the ability of hospices to stabilize patients' needs and required interventions over time.

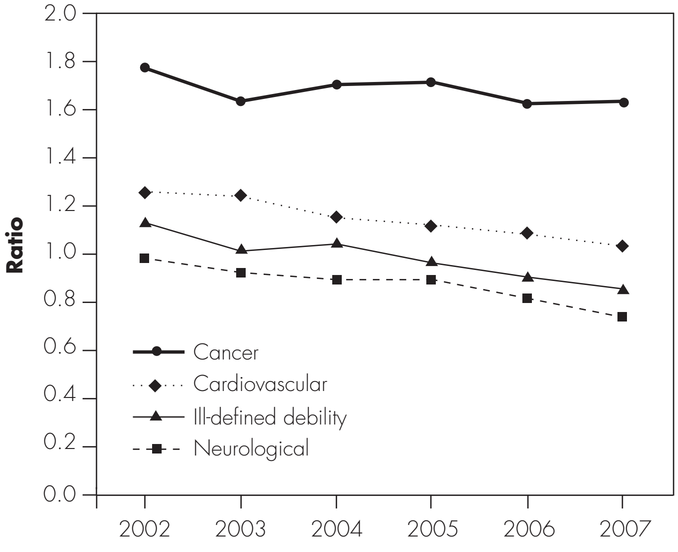
The use of less expensive home health aide services over more expensive registered nurse (RN) or licensed practical nurse (LPN) services, where clinically appropriate, may also explain why longer episodes in hospice are more profitable. Our analysis of the hospice chain's data for 2002–2007 showed that the ratio of visits conducted by RNs and LPNs to visits conducted by home health aides remained relatively constant for cancer patients but declined for neurological, nonspecific debility, and cardiovascular patients (Figure 8-5).

These data initially appear to suggest that hospice patients with noncancer diagnoses receive a lower level of care than patients admitted to hospice with cancer. To some extent that is true, as evidenced by the way the practitioner mix varies according to diagnosis. But it is also true that these data are confounded by the relationship between diagnosis and length of stay. We have documented that hospice episodes are more costly at the beginning and end of the episode because of the intensity of services provided at those times—that is, hospices provide more visits right after the patient is admitted to hospice and in the time shortly before death. Intervening periods are characterized by fewer visits per time period. As a result, shorter episodes will reflect a larger number of visits per week, whereas longer episodes will appear to have fewer visits per week. Given that some diagnoses typically have shorter lengths of stay than others, diagnoses such as cancer will appear to have higher visit intensity than diagnoses such as nonspecific debility.

Controlling for episode length, our analysis of the hospice chain's data showed a remarkable consistency in the number of visits per week its hospices provide. In all years of data analyzed, we found that shorter episodes had uniformly higher visit intensity regardless of diagnosis, as measured by visits per week, and that longer episodes had uniformly lower intensity. In 2007, the hospice chain's Medicare beneficiaries with cancer and neurological diagnoses with episodes of 30 or fewer days received an average of 12.3 and 13.1 visits per week, respectively (Figure 8-6). In the same year, cancer and neurological

FIGURE 8–5

Change in ratio of LPN and RN visits to home health aide visits during Medicare hospice episodes, by disease type

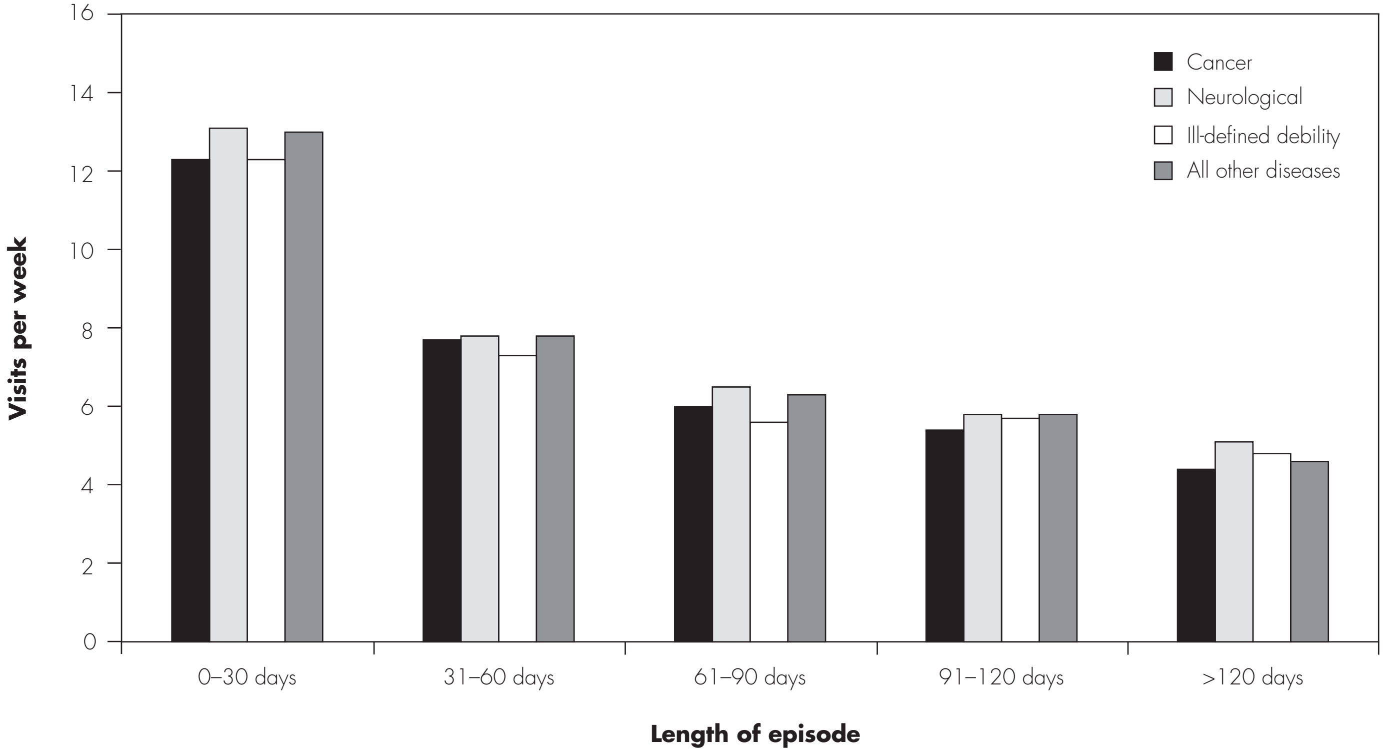


Note: LPN (licensed practical nurse), RN (registered nurse).

Source: MedPAC analysis of data from a large national chain hospice provider.

FIGURE 8–6

Shorter stays have higher visit intensity; longer stays have lower visit intensity, 2007



Source: MedPAC analysis of data from a large national chain hospice provider.

patients with episodes of 121 or more days had 4.4 and 5.1 visits per week, respectively.[24] Patients with very short episodes had higher visit intensity than longer stay patients, regardless of patient diagnosis. This analysis further illuminates our previous findings that the beginning and end of hospice episodes are more costly because of the more intensive provision of services at these times. It also empirically demonstrates, for this national hospice chain at least, why longer episodes are more profitable than shorter ones.

Although these patterns may not be representative of all hospices nationwide, they are consistent with our understanding of hospice care based on anecdotes or qualitative descriptions from hospice providers and their trade associations and may represent a good basis of comparison for the initial data CMS will collect via hospice claims effective in the summer of 2008.

Measuring and reporting quality of hospice care

CMS does not currently require hospices to report information on the quality of care they provide. Numerous studies have indicated that hospice improves the quality of remaining life for patients who elect hospice (Kane et al. 1984, Miller et al. 2003). But developing standardized empirical quality measures that can be used for program administration—either to compare provider performance or to adjust payments under future pay-for-performance programs—presents unique challenges. The set of hospice characteristics that are correlated with quality is not clear-cut, and structural, process, and outcomes measures are scarce. Measures that rely on patient (or family) perceptions of care are more common, but establishing the validity of those characteristics may be difficult because of their subjective nature.

Whereas identifying appropriate quality indicators and developing corresponding measurement protocols are difficult in any health care setting, assessing the quality of hospice care presents unique challenges. Some measures of patients' experience with hospice care exist, although patients' ability to directly assess the quality of care during the course of the episode may vary considerably, if they can do it at all (e.g., dementia patients may not be able to accurately or objectively respond to written or verbal questions). Given that the median length of stay in hospice is roughly two weeks, many patients with other diagnoses nearing the end of life may not be able to assess their experience with hospice care. Measuring satisfaction with care directly from the hospice patient presents challenges that are unique among patient populations. Therefore, some assessment of the quality of hospice care can be ascertained only through other means—either by virtue of a hospice's staffing and other provider characteristics or by assessments of care obtained from the hospice patient's survivors (who are also the beneficiaries of some of the hospice's activities during the course of an episode of hospice care).

Hospice-level quality indicators

In 1997, the Institute of Medicine (IOM) identified a number of elements that it considered intrinsic to health care systems (including hospices) engaged in providing care at the end of life (IOM 1997). These include providing or arranging for:

- symptom prevention and relief;
- attention to emotional and spiritual needs and goals;
- care for the patient and family as a unit;
- sensitive communication, goal setting, and advance planning;
- interdisciplinary care; and
- services appropriate to the various settings and ways in which people die.

IOM did not identify the tools needed to measure the extent to which these activities and capacities could be achieved. Instead, it listed structural and process "dimensions" of quality of care for dying patients that could be used as administratively based quality measures (e.g., staffing, fiscal controls, and the establishment of prognoses and care plans). In 2004, the Agency for Healthcare Research and Quality sponsored an intensive literature review on end-of-life care (including hospices) that focused on relevant patient, family, and provider factors as well as processes and interventions that could be used to identify components of high-quality care (Lorenz et al. 2004).[25] This review identified the following factors as influencing end-of-life care outcomes:

- pain and symptom management
- support for families and other caregivers
- continuity and coordination of care
- advance care planning and respect for patients' wishes

Hospices can vary considerably in their ability to provide even these essential services. In 2007, Carlson and colleagues reported their assessment of the performance of hospices from 1992 to 2000 in providing core services (as defined in the applicable sections of the U.S. Code of Federal Regulations governing the Medicare hospice benefit) using data from the discharge questionnaire of the National Home and Hospice Care Survey administered by the National Center for Health Statistics (Carlson et al. 2007).[26]

Carlson and her colleagues defined five essential categories of care (nursing care, physician care, medication management, psychosocial care (counseling and spiritual care), and caregiver support), based on the National Consensus Project's eight domains of high-quality care.[27] They found that in 2000, only 14 percent of hospices (accounting for 22 percent of the sample's patients) provided care in all five categories; 12 percent of hospices provided care in only one category. These percentages represented an increase in hospices' provision of service by category from 1992. The provision of services did not vary by whether the hospice was urban or rural.

Analyzing the provision of services from the patients' (rather than the hospices') perspective, Carlson and colleagues again noted considerable variation. Table 8-13 shows that between 1992 and 2000, the percentage of patients using skilled nursing services declined slightly (from 95 percent to 92 percent), whereas the percentage of patients using homemaker services increased by more than 62 percent. The percentage of hospice patients receiving physician services and medication management increased, and the percentage of patients receiving counseling declined over this time, as did the provision of respite care.

Carlson and colleagues could not definitively ascertain the reasons for variation in service provision but suggested that variation in the provision of nonhospice palliative care may have played a role—that is, patients may have access to palliative care services outside of the hospice benefit. The study did not assess whether all patients needed or had been offered all these services but simply whether they had been provided. The fact that such variation exists, in terms of both the distribution of hospices' provision of core services and the percentage of patients receiving core services in a given category, suggests that additional data collection is necessary (e.g., hospice patients' use of drugs, medical equipment, emergency services, and services unrelated to their terminal conditions) and that CMS survey and certification efforts may be necessary to ensure that hospices are providing the essential categories of care enumerated in Medicare's applicable conditions for participation.

TABLE 8–13

Variation exists in patients' use of hospice services

Service category	1992	2000	Percent change
Homemaker/household services	8%	13%	62.5%
Medication management	39	59	51.3
Physician services	24	30	25.0
Skilled nursing	95	92	–3.2
Counseling	36	31	–13.9
Respite care	11	7	–36.4
Spiritual care	N/A	59	N/A

Note: N/A (not available).

Source: Adapted from Carlson et al. 2007.

Patient and family assessments of hospice quality

In addition to hospice-level factors associated with care quality, patient and family assessments can suggest the presence or absence of quality in the hospice care a patient receives. One of the most prominent of such assessments is the Family Evaluation of Hospice Care (FEHC), a survey developed and fielded by NHPCO, with major analytic and substantive input from researchers at Brown University (Connor et al. 2005, Connor et al. 2004). The FEHC surveys recipients on how well the hospice attended to family support and information needs and how well the hospice assisted in coordinating care. It also solicits information on the family's perception of how well the hospice met the patient's needs for pain management, assistance with respiratory difficulty, and emotional support. The survey is mailed to the family of the deceased hospice patient or other designee, generally one to three months after the patient's death. Respondents are asked to return the survey to the hospice or its contractor, which submits the data to NHPCO. Then NHPCO compiles the survey responses for each responding hospice, calculates state and national totals, and provides each hospice with a detailed summary of its scores and how its scores compare with those of other hospices in the state and nationwide. Since 1999, NHPCO has worked to refine the survey instrument, improve the quality of data reporting, and improve the survey response rate. In October 2006 the National Quality Forum endorsed national voluntary consensus standards related to the quality of care for symptom management and end-of-life care for patients with cancer. The National Quality Forum standards included nine performance measures for accountability, internal quality improvement, and/or surveillance. Among the endorsed measures was NHPCO's FEHC, which was the only measure designated as an accountability measure. One of the NHPCO End Result Outcome Measures, the Comfortable Dying Measure, was also selected as a quality improvement measure.

In the fall of 2007, the National Association for Homecare and Hospice (NAHC) developed an abbreviated version of a family satisfaction survey as well as a patient survey. Each is a single page, and each asks the survey respondent to rate the hospice's performance by agreeing or disagreeing with statements characterizing how well the hospice met the patient's pain and symptom management and other needs, its communications with the patient and the family, and the hospice staff's personal interactions with the patient. Participating hospices provide the surveys to the patient (two weeks after admission) or the family (two months after the patient's death); respondents return the surveys directly to NAHC, which compiles the data and reports hospice-specific results to each participating hospice. (The NAHC survey effort is in its early stages, and there are no aggregate results to report at this time. Therefore, much of the following discussion deals with the FEHC survey, but many of the conceptual issues pertain to both surveys.)

NHPCO's efforts to improve the FEHC and NAHC's efforts to develop a shorter family survey (as well as a patient survey) represent potentially useful tools for hospices to identify areas for improvement within their operations. The FEHC and the NAHC family survey can provide useful feedback to individual participating hospices by identifying specific areas where they can improve the quality of care they provide. For example, most hospices participating in the FEHC in 2004 performed well in managing their patients' pain and shortness of breath and in providing emotional support. There was variation in other measures, however; 29 percent of respondents overall indicated that hospices had "opportunity for improvement" in communicating information about the patient's condition to their families. At the 75th percentile of hospices, more than one-third of patients expressed such concerns (Connor et al. 2005).

However, there are limitations to the potential use of these types of surveys by the Medicare program in assessing the quality of hospice care. First, the surveys are voluntary, and although the organizations encourage their members to participate in the survey effort, members are not required to do so. In 2008, one-half of NHPCO's members participated, representing roughly one-third of all hospices nationwide (Connor 2008). Hospices that are not NHPCO members (and thus not represented in the FEHC) are more likely to be smaller and to be for-profit hospices or to have membership in another hospice association. Hospices that are not association members may be less likely to adhere to the association's principles and guidelines governing hospice care. In addition to potential bias related to association membership, hospices that participate in the surveys may consider themselves high-quality providers and look to the surveys to validate these perceptions, a self-selection that could introduce additional bias into the results. In addition to a potentially skewed distribution of participating hospices, family response rate—currently 46 percent—may also skew the results in that we do not know how nonrespondents characterized their satisfaction with the care the hospice patient received. NHPCO believes that participation in the survey may increase if CMS's proposed revisions to the hospice care amendments (conditions of participation) (CMS 2005) are finalized, given that hospices could use FEHC participation and subsequent responsive action as evidence of a quality assessment and performance improvement program required by the proposed rule.

Second, the FEHC and the NAHC family survey measure hospice care through the perceptions of family members or persons otherwise closely related to the hospice patient. Many questions rely almost exclusively on the perceptions of these respondents, whose answers on behalf of the patient may not necessarily reflect the patient's actual experience, particularly if the patient was unable to communicate well. For example, the FEHC asks respondents questions about whether the patient's pain medication was the right amount or more or less than the patient wanted and whether the hospice team always, usually, sometimes, or never treated the patient with respect.[28] The NAHC's Patient Satisfaction Survey, currently in the early stages of implementation, may provide information to fill this gap in the future. NHPCO, in conjunction with researchers at Brown University and the University of Massachusetts, is also in the early stages of developing and testing a patient evaluation-of-care tool. However, measuring hospice patient satisfaction is a uniquely difficult endeavor. In developing the patient perception-of-care survey instrument, researchers working with NHPCO estimate that only 20 percent to 25 percent of patients would be able to respond to a survey administered 14 days after admission.

Other questions are aimed at assessing how well the hospice performed in meeting the family's needs (e.g., "how often did the hospice team keep you informed about the patient's condition?" and "did the hospice team explain the plan of care to you in a way that you could understand?"). Given the lack of quantifiable specific outcomes under the hospice benefit and that much of the hospice benefit consists of emotional, spiritual, and psychological supports, family perceptions may be appropriate indicators of the quality of hospice care.

A third limitation of hospice performance assessments by nonprofessionals is the tendency for respondents to give positive ratings; thus, such assessments may not adequately differentiate performance among hospices. One goal of the FEHC was to develop questions that would differentiate among hospices' performance in the various domains of care, something that NHPCO's initial attempt at a survey instrument did not adequately do. However, despite refinements to the survey in light of field experience over the last several years, it is unclear whether the current iteration of the survey has improved the ability to differentiate hospice performance among its various measures. For example, results from the 2005 FEHC suggest that well over 90 percent of survey respondents rated their family member's care as "excellent" or "very good" (Rhodes et al. 2007). (Somewhat better differentiation occurs when these two categories are disaggregated (Connor 2008).) The FEHC also reports composite scores for each hospice provider, assessing overall satisfaction with care. In 2004, the average composite satisfaction score was 47.1 (of a possible score of 50), with a median of 47.6, and an interquartile range of 46.7 to 48.2 (Connor et al. 2005). These scores may reflect the nature of family members' perceptions—that they greatly appreciate almost any hospice involvement at the end of the patient's life.

CMS measures of hospice quality

CMS does not currently require hospices to collect or report information on the quality of care they provide. In part, the absence of such a requirement reflects the fact that hospice quality measures remain under development and that, to a large extent, assessments can be subject to interpretation and bias. As part of the revisions to the hospice conditions of participation CMS proposed in 2005, hospices would be required to engage in quality assessment and performance improvement projects linked to improving palliative outcomes and end-of-life support services (CMS 2005). Hospices would be required to collect performance data on measurable quality indicators and demonstrate that they continuously monitor these data and use them on an ongoing basis to improve the quality of their care. In its proposed rule, CMS does not require that hospices use any specific or particular process or measures but suggests that participation in NHPCO's surveys (e.g., the FEHC) would satisfy this requirement. CMS does not propose public reporting of any data obtained through the hospice's quality assessment and performance improvement projects.

In 2006, CMS implemented a project with the Carolinas Center for Medical Excellence (CCME), Medicare's quality improvement organization for North and South Carolina, to identify quality measures for end-of-life care and collect and analyze the instruments available to gather data on those measures. The CCME submitted the first deliverables of the project (known by its acronym PEACE) to CMS in February 2008. Some of these measures are generally comparable to measures NHPCO uses in its FEHC survey. The PEACE instrument contains similar measures for assessing and treating dyspnea and other clinical symptoms—as well as measures of psychological, social, and spiritual aspects of care—all generally expressed as a percentage of the hospices' total patients. The PEACE measures aim to better quantify quality data by assessing the percentage of patients whose care met certain process benchmarks or received certain services within a specified period of time. For example, the PEACE instrument measures the percentage of patients who were screened for pain on admission, the percentage of patients affirming pain who had a clinical assessment within one day, and—of those—the percentage whose pain was mitigated within 48 hours. These data would be obtained through a variety of sources, including the hospice's existing administrative data, through after-death family surveys, and through patient chart reviews (CCME 2008). CMS is reviewing CCME's deliverables; the National Quality Forum will also review the measures before they are publicly disseminated.

Public reporting of hospice quality data

In recent years, the American Hospice Foundation has been developing a hospice "report card" that would provide a vehicle for public reporting of quality and other data to allow members of the public to compare hospices' performance in terms of quality. The hospice report card would use many of the measures included in NHPCO's FEHC, such as mitigation of pain, mitigation of shortness of breath, and patient and family satisfaction indicators. It would also report administrative data, such as visits per week and staffing ratios, and include graphic displays that compare hospices in the same market and the average performance on these quality measures for all hospices in a state.

Other potential measures using administrative data

In the absence of good outcomes measures, some members of the hospice community have indicated that certain administrative measures, such as service intensity (measured by visits per week) and staffing ratios, could serve as gross indicators of quality that could differentiate performance among hospices. Outcomes measures or direct measures of quality of care are generally preferable, but, given the limitations of such measures in the hospice setting, such administrative measures may have a place in assessing hospice quality.

Some hospices have suggested that a measure of nursing costs per patient day may help differentiate hospices in the level of care they provide. The American Hospice Foundation uses nursing visits per week as one measure of quality in its "hospice report card" currently under development.

In our analysis of hospices' nursing cost data, we found that nursing costs were consistent by provider type, did not vary by patient load, and were correlated with a hospice's profitability. Specifically, in the four years we examined, nonprofit hospices had higher nursing costs per day than

TABLE 8–14

Higher margin hospices have lower nursing costs per day, 2005

Category	Nursing costs per day
All	$53.67
Urban	54.54
Rural	48.95
Nonprofit	55.80
For profit	50.23
Government	77.57
Other	63.37
Freestanding	49.84
Provider based	66.13
Home health based	56.72
Hospital based	75.41
Patient volume (quintile)	
1	54.00
2	50.24
3	52.90
4	52.08
5	54.76
Margin (decile)	
1	101.31
2	71.55
3	56.96
4	54.48
5	53.09
6	53.52
7	50.96
8	49.49
9	42.94
10	33.34

Source: MedPAC analysis of Medicare hospice cost reports, 100 percent hospice claims standard analytical file, and Medicare Provider of Services data from CMS.

did for-profit hospices, and provider-based hospices had higher nursing costs than freestanding providers (Table 8-14).

In addition, we found that nursing costs did not vary significantly with patient load. That is, nursing costs per day for the 20 percent of hospices with the fewest patients are generally comparable to nursing costs per day for hospices with the greatest number of patients. This pattern suggests a relatively constant relationship of nursing costs to patient loads; a hospice's nursing costs rise as its census increases.

In contrast, we found that hospices' nursing costs varied as a function of their profitability under Medicare. Hospices in the highest margin decile had nursing costs per day that were roughly only one-third of the nursing costs per day of hospices in the lowest margin decile.

Four factors could independently or in combination explain the progressively lower nursing costs with each margin decile category:

- ***Provider efficiency.*** More profitable providers could be serving their patient base with lower levels of nursing care than their less profitable (and less efficient) counterparts.
- ***Patient mix.*** A provider might have a large share of long-stay hospice patients (e.g., those with neurodegenerative diseases or nonspecific debility) who use a smaller percentage of skilled nursing services than do patients with diagnoses associated with shorter stays.
- ***Provider type.*** Provider-based hospices have higher overall costs per day than do freestanding facilities, in part due to the allocation of costs from the parent provider, but other factors likely play a role as well.
- ***Differences in skilled nursing visits per day.*** A hospice provider can achieve lower nursing costs per day by using more home health aides and fewer nurses and by providing fewer nursing visits per week to its patients.

Measures of staffing or other administrative measures would need further evaluation to fully test their validity as indicators of hospice quality.

Conclusion and implications for next steps

Medicare's hospice benefit is unique in its provision of a package of services tailored to patients at the end of life and their families. It provides clinical and personal support services for patients at the end of life beyond what Medicare covers through its traditional benefit package, allowing a dignified death at home and with family for those who choose to do so. In exchange for this benefit, hospice enrollees explicitly forgo Medicare coverage of curative treatment for their terminal conditions. In making this choice, beneficiaries avoid the costs of hospitalizations and other intensive medical interventions at the end of life. It is important that the hospice benefit, and Medicare's reimbursement system for hospice care, be as well aligned as possible with the costs to an efficient hospice of providing care to meet these patients' needs.

The population using hospice has changed since the inception of the hospice benefit, and now patients with terminal diagnoses other than cancer choose to avail themselves of this benefit. Such an expansion to appropriate patients is desirable from a number of perspectives. However, our current work suggests that the hospice payment system provides an incentive for hospices to seek patients likely to have long hospice episodes, which are more profitable than short episodes. We have seen that longer hospice stays are more costly for the Medicare program than traditional curative end-of-life care, and thus the incentive in the payment system that financially rewards hospices for longer stays runs counter to the fiscal interests of Medicare overall, operating in direct conflict with Medicare's interest in ensuring that the hospice benefit provide a less costly alternative to traditional end-of-life care. The hospice cap serves as a check on additional Medicare expenditures for hospice care, but a relatively generous one, given that the cap amount in 2004 was roughly equivalent to 85 percent of the cost of a full year of end-of-life care in that year. The hospice payment system should be changed to minimize incentives that make some patients more profitable than others, so that access is equal for all Medicare beneficiaries who wish to use the benefit.

The aggregate per beneficiary payment limit should be reevaluated and updated to reflect the current provision of end-of-life care through hospice, but only as part of a larger restructuring of the hospice payment system. Any revisions to the cap should be made in a manner consistent with changing the incentives in the payment system to ensure the most appropriate use of hospice care at the end of life. Additionally, fiscal and program management controls should be strengthened where they currently exist, and new ones should be implemented where they do not, for purposes of increasing the fiscal integrity of the benefit and for general programmatic management.

The cap has raised questions about the guidance that CMS, Medicare intermediaries, and hospice associations provide to individual hospices regarding the identification of patients near the end of life who are appropriate for admission to hospice. Hospices reaching the cap assert that they are admitting patients in conformity with the guidance applicable to them. However, striking differences in the lengths of stay between hospices that exceed the cap and those that do not persist across virtually all diagnoses and disease categories. Neither above-cap nor below-cap hospices are able to explain this phenomenon, and administrative data do not contain sufficient information to permit an assessment of patient characteristics that may shed light on it. These differences suggest that the guidance for some terminal conditions may not adequately identify the stage in the progression of the disease when hospice admission is appropriate. This, coupled with the financial incentives to admit patients with the potential for long stays, could help explain these patterns.

Little accountability exists in the hospice payment system in terms of requirements to document services provided as a condition for reimbursement. Hospice is the only Medicare provider payment system under which providers do not have to report the services they furnish on their claims. Providers have had to report only the number of days of patient care broken down by the four hospice care categories. They have not been required to report information on the resources used, the content or duration of services provided, or the outcomes of these services. The recent CMS change request will require hospices to report a limited amount of information that will begin to fill this gap, but this new information will not fully meet the program's data needs. For example, in the first iteration of the data collection, CMS will collect information on the number of nursing visits but not their duration or type, nor will the agency collect information on all practitioners involved in hospice care. Nevertheless, the new requirement represents a first step in ensuring the flow of information that will be vital to refining and monitoring the hospice benefit in the future.

Because of the lack of data on services provided to patients with specific diagnoses, it is difficult to determine the adequacy of Medicare payments relative to the cost of hospice care on a condition-specific basis. We have little information on how the cost of hospice care varies by the patient's admitting diagnosis, so we do not know if the payment system inappropriately discourages or encourages different kinds of admissions based on the relationship of Medicare payments to patient costs. The only publicly available measure that correlates resource use by diagnosis is length of stay. We know that longer stays are more profitable, based in part on the differential visit intensity during the course of an episode. We also know that profitability is highest for providers with low nursing costs, but we do not have information on how these costs are distributed among these hospices' patients with different diagnoses.

Lastly, we note that standardized data on the quality of hospice care that could be used for program oversight and evaluation are virtually nonexistent. The hospice community surveys patients and their families to compile information on the quality of care hospices provide, but due to the subjective nature of such protocols and concerns about their ability to differentiate among hospice providers' performance, they are not immediately useful for program administration purposes. Process or operational measures (e.g., staffing ratios or visit intensity) either have not been evaluated or data do not exist to establish baselines as they pertain to quality of care. CMS will likely require hospices to engage in quality improvement projects as part of new conditions for participation scheduled to be promulgated in May 2008. However, a considerable period of time will elapse before data on the quality of care, resulting from such projects or from administrative or other systematic data, will be available for purposes of comparing quality among hospice providers or to institute quality-based payment incentives in Medicare's hospice payment system. ■

Endnotes

1 New conditions of participation for hospices were published in a proposed rule on May 27, 2005 (CMS 2005). The current conditions of participation went into effect in 1983 and were last amended in 1990.

2 The wage index is determined by the location where the services are provided, not by the location of the hospice provider. The hospice wage-index values are the prefloor, prereclassification hospital wage index values subject to a budget-neutrality adjustment or wage-index floor (an amount 15 percent greater than the raw wage index calculated for areas with a wage index of less than 0.80). Budget neutrality is defined as estimated aggregate payments to hospice providers that would have been made if the 1983 wage-index values remained in effect. CMS recommended eliminating the budget-neutrality adjustment in a proposed rule published May 1, 2008 (CMS 2008).

3 This premise came from a Congressional Budget Office analysis in the early 1980s that suggested that hospice would reduce Medicare spending for care at the end of life by substituting less costly home care for expensive inpatient hospital treatments (Bayer and Feldman 1982, Freudenheim 1986, Miller and Mike 1995, UPI 1982) as well as from the anticipated results of the Medicare National Hospice Study, conducted from 1978 to 1981. Reduced spending was to be enforced via a limit on the amount Medicare would pay hospices under the benefit that took the form of the "hospice cap." Draft legislation (H.R. 5180, S. 1958) initially set the cap at 75 percent of the average Medicare cost of treating a cancer patient in the last six months of life, but, by the time the legislation passed in August 1981 (P.L. 92-248, 96 STAT. 324), the cap had been reduced to 40 percent (Bayer and Feldman 1982). On imposing the cap in 1983, however, it was discovered that, although the Health Care Financing Administration (the agency that is now CMS) had implemented the statutory language establishing the benefit correctly, that language was based on an erroneous congressional interpretation of the Congressional Budget Office scoring of the draft legislation. The cap was legislatively set at $6,500 in June 1983 (Dole 1983). It is updated for inflation annually.

4 The average annual payment cap is calculated for the period November 1 through October 31 each year. For the year ending October 31, 2005, the cap amount was $19,776; for the period ending October 31, 2007, the cap was $21,410. Beneficiaries are counted in a given year if they have filed an election to receive hospice care from the hospice during the period beginning on September 28 before the beginning of the cap period and ending on September 27 before the end of the cap period. If a beneficiary receives hospice care from more than one hospice during the year, each hospice counts the fraction that represents the portion of a patient's total hospice stay spent in that hospice.

5 The second cap limits the share of inpatient care days (either inpatient respite care or general inpatient care) an agency may provide to 20 percent of its total patient care days each year. This cap was intended to prevent hospice care from becoming a predominantly inpatient benefit and to preserve the delivery of hospice care in the patient's home (Gage et al. 2000). If an agency exceeds the 20 percent inpatient cap, Medicare pays the routine home care rate for the days above the threshold. Hospices rarely exceed the 20 percent inpatient limit on total patient care days.

6 Studies consulted in developing this summary information include Brooks (1989), Brooks and Smyth-Staruch (1984), Campbell and colleagues (2004), Cheung and colleagues (2001), Emanuel and Emanuel (1994), Emanuel and colleagues (2002), Gage and colleagues (2000), Greer and Mor (1986), Hannan and O'Donnel (1984), Hughes and colleagues (1992), Kane and colleagues (1984), Kidder (1998, 1992), Miller and colleagues (2004), Miller and Mike (1995), Mor and Birnbaum (1983), Mor and Kidder (1985), Pyenson and colleagues (2004), Spector and Mor (1984), and Taylor and colleagues (2007).

7 Similarly, the cost differential may vary by patient age. This is especially important to keep in mind, as the rate of hospice enrollment by age group is fastest among the oldest segment of the Medicare population—historically, those who incur the lowest spending at the end of life regardless of hospice.

8 In the early 1990s, the Department of Health and Human Services Office of Inspector General, the Health Care Financing Administration (now CMS), and the Administration on Aging had implemented Operation Restore Trust (ORT), which was a concerted effort to combat waste, fraud, and abuse in the Medicare program. Hospices were specifically targeted for ORT focus, given a long list of potentially fraudulent practices identified by the Office of Inspector General that some hospices may have engaged in to maximize Medicare reimbursement. ORT's activities may have contributed to the reduced length of stay observed in this period by making physicians more wary of referring all but the most clear-cut terminal cases to hospice.

9 This figure is not precisely comparable to the preceding NHPCO percentages. The NHPCO figures reflect a subset of hospices rather than all Medicare-participating hospices. In addition, the Commission's figure includes decedents as well as hospice users who did not die in 2005.

10 One Medicare hospice intermediary, Palmetto GBA, accounted for more than 80 percent of hospices reaching the cap in 2005, raising speculation that this intermediary may have been anomalous with respect to its admissions guidance or its cap calculation methodology (MedPAC 2006). However, discussions with all the RHHIs have indicated that there is no general inconsistency in admissions guidance, and, with the exception of how each intermediary handles patients who transfer from one hospice to another during the course of their end-of-life care, all RHHIs use the same methodology for counting patients for the purpose of calculating the cap.

11 These aggregate numbers do not precisely match the previously published figures we received from the RHHIs. This could be due to a number of methodologic factors. The trends are consistent between the two sources.

12 Length of stay is reported on cost reports only for freestanding facilities.

13 The length of stay for "all other diseases" was about 138 percent greater in above-cap hospices than it was for hospices that did not reach the cap, but given the heterogeneous content of this category, it is difficult to impute more than a general significance to this fact.

14 We focused on voluntary closures rather than involuntary terminations under the assumption that involuntary terminations could be definitively ascribed to factors other than a hospice reaching the cap; CMS does not terminate participation for exceeding the cap.

15 In terms of the number of hospices per capita, Oklahoma ranked highest in 2005, with 2.86 hospices per 10,000 Medicare beneficiaries (145 hospices and 506,000 beneficiaries). By contrast, Maine, at the midpoint of the distribution, had 0.87 hospice per 10,000 beneficiaries, and Florida had the smallest number of hospices per 10,000 beneficiaries with 41 hospices serving more than 2.8 million beneficiaries in 2005, a ratio of 0.14 hospice provider per 10,000 beneficiaries.

16 Over the last 10 fiscal years, annual increases in hospice use have ranged from 7.0 percent to 15.4 percent (CMS 2007a).

17 The rate of hospice use by beneficiaries with end-stage renal disease enrolled in managed care declined between 2000 and 2005.

18 Hospice care is one of several health care lines of business that Beverly Enterprises operates. Aseracare, its hospice unit, operates 52 hospice and home health locations, which accounted for only $65.6 million of Beverly's $2 billion in revenues in 2004. The company's financial statements do not permit the calculation of margins by business line. Similarly, hospice makes up a relatively small share of Manor Care's operations, and information necessary to calculate its hospice-specific margin is not available.

19 Although increasing length of stay may be a strategy to maximize the profitability of Medicare hospice episodes, the strategy is not without risks. In addition to the heightened risk of cap exposure as length of stay increases (with the corresponding obligation to return excess payments to the Medicare program), increasing length of stay may also attract the attention of regulatory and enforcement agencies. In April 2005, the Department of Health and Human Services Office of Inspector General issued civil subpoenas to Vitas alleging inappropriate billings for its Medicare and Medicaid hospice patients (Chemed 2007). Vitas had been investigated previously on the basis of similar allegations under the auspices of Operation Restore Trust; that investigation concluded without adverse findings against Vitas. The Department of Justice investigated Odyssey HealthCare on the basis of suspected admission of patients who did not meet the presumptive eligibility requirement. In 2006, Odyssey HealthCare settled the Justice Department complaint, paying a $13 million fine, without admitting wrongdoing (Odyssey HealthCare 2007).

20 Government providers' margins were negative in all years between 2001 and 2005, but their underlying cost report data exhibit irregularities and atypical values that lead us to question the reliability of these margins.

21 Cost reports for provider-based hospices do not include this variable.

22 For the most part, data on hospice visits are limited to those collected under the auspices of the National Hospice Study, the three-year demonstration (1978–1981) that laid the groundwork for the Medicare hospice benefit. Even at that time, differences in service utilization by patient diagnosis were evident: "Based upon the billing data received from demonstration hospices, noncancer patients appear to use almost twice as many hours of home health, homemaker, and nursing services during their stay in hospices" as do cancer patients (Mor and Birnbaum 1983).

23 Data from this provider for the first two months of 2008 suggest that average length of stay for patients with noncancer diagnoses may have begun to level off somewhat.

24 Although the number of visits per week increased for many of the length-of-stay and disease categories we examined, visit intensity declined overall during this period, as illustrated in Figure 8-5. This is because longer stays (with lower visit intensity) increased as a percentage of this chain provider's total stays.

25 The Agency for Healthcare Research and Quality analysis also identified patient satisfaction as an indicator of the effectiveness of provision of care at the end of life.

26 Core services are defined under Subpart D of the conditions of participation codified at 42 CFR 80–88 as nursing services, medical social services, physician services, and counseling services (bereavement, dietary, and spiritual).

27 These domains are: structure and processes of care; physical aspects of care; psychological and psychiatric aspects of care; social aspects of care; spiritual, religious, and existential aspects of care; cultural aspects of care; care of the imminently dying patient; and ethical and legal aspects of care.

28 Even questions aimed at the hospice patient that are more amenable to quantification, such as mitigation of pain (measured on a numeric scale) within 48 hours, are subject to individual patient perceptions.

References

Armstrong, L. 2006. Does being nonprofit matter when it comes to providing hospice care? *The Business Journal of Phoenix*. Phoenix, AZ: American City Business Journals, Inc. November 3.

Bayer, R., and E. Feldman. 1982. Hospice under the Medicare wing. *The Hastings Center Report* 12, no. 6 (December): 5–6.

Brooks, C. H. 1989. A comparative analysis of Medicare home care cost savings for the terminally ill. *Health Care Services Quarterly* 10, no. 1/2: 79–96.

Brooks, C. H., and K. Smyth-Staruch. 1984. Hospice home care cost savings to third-party insurers. *Medical Care* 22, no. 8: 691–703.

Campbell, D. E., J. Lynn, T. A. Louis, et al. 2004. Medicare program expenditures associated with hospice use. *Annals of Internal Medicine* 140, no. 4: 269–277.

Carlson, M. D. A., R. S. Morrison, T. R. Holford, et al. 2007. Hospice care: What services do patients and their families receive? *Health Services Research* 42, no. 4: 1672–1690.

Carney, K., N. Burns, and B. Brobst. 1989. Hospice costs and Medicare reimbursement: An application of breakeven analysis. *Nursing Economics* 7, no. 1: 41–47.

Carolinas Center for Medical Excellence. 2008. *PEACE project summary*. Cary, NC and Columbia, SC: CCME. http://medqic.org/dcs/ContentServer?cid=1203781867920&pagename=Medqic%2FListingPages%2FMainListingTemplate&parentName=Topic&level3=Tools&resetSessionForTopic=Yes&c=MQParents.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2008. Medicare program; proposed hospice wage index for fiscal year 2009. Proposed rule. *Federal Register* 73, no. 85: 24000–24035.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2007a. *Medicare hospice data, 1998–2005*. Baltimore: CMS. http://www.cms.hhs.gov/ProspMedicareFeeSvcPmtGen/downloads/HospiceData1998-2005.pdf.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2007b. *Reporting of additional data to describe services on hospice claims*. Trans. 1397, CR 5567, Pub. 100–04. Baltimore: CMS.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2007c. *Correction of the hospice cap for FYs 2003 and 2004*. Trans. 1226, CR 5596, Pub. 100–04. Baltimore: CMS.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2005. Medicare and Medicaid programs; hospice conditions of participation. Proposed rule. *Federal Register* 70, no. 102: 30840–30893.

Chemed Corporation. 2007. *Form 10-K, annual report*. Filed with the Securities and Exchange Commission, Washington, DC, February 28. Cincinnati, OH: Chemed Corp.

Cheung, L., K. Fitch, and B. Pyenson. 2001. *The costs of hospice care: An actuarial evaluation of the Medicare hospice benefit*. Report by Milliman USA for the National Hospice and Palliative Care Organization, August 1. New York: Milliman USA.

Connor, S. 2008. Telephone conversation with author, March 17.

Connor, S. R., J. Teno, C. Spence, et al. 2005. Family evaluation of hospice care: Results from voluntary submission of data via website. *Journal of Pain and Symptom Management* 30, no. 1: 9–17.

Connor, S. R., M. Tecca, J. Lund Person, et al. 2004. Measuring hospice care: The National Hospice and Palliative Care Organization National Hospice Data Set. *Journal of Pain and Symptom Management* 28, no. 4: 316–328.

Deutsche Bank Equity Research. 2008. *Odyssey HealthCare Inc., highlights from recent HQ visit*. New York: Deutsche Bank Securities, Inc. March 31.

Dole, R. 1983. New hospice legislation. *American Journal of Nursing* 83, no. 9: 1276.

Emanuel, E. J., and L. L. Emanuel. 1994. The economics of dying: The illusion of cost savings at the end of life. *New England Journal of Medicine* 330, no. 8: 540–544.

Emanuel, E. J., A. Ash, W. Yu, et al. 2002. Managed care, hospice use, site of death, and medical expenditures in the last year of life. *Archives of Internal Medicine* 162, no. 15: 1722–1728.

Fitch, K., and B. Pyenson. 2003. *First and last days of hospice care cost more: An actuarial evaluation of hospice benefits provided to Medicare beneficiaries*. Report by Milliman USA for the National Hospice and Palliative Care Organization. New York: Milliman USA. February 23.

Freudenheim, M. 1986. Business and health; hospice care as an option. *The New York Times*, February 4.

Gage, B., S. Miller, K. Coppola, et al. 2000. *Important questions for hospice in the next century*. Report by the Medstat Group. Washington, DC: Department of Health and Human Services. http://aspe.hhs.gov/daltcp/reports/impques.htm.

Government Accountability Office. 2004. *Medicare hospice care: Modifications to payment methodology may be warranted*. GAO–05–42. Washington, DC: GAO.

Greer, D. S., and V. Mor. 1986. An overview of National Hospice Study findings. *Journal of Chronic Disease* 39, no. 1: 5–7.

Hannan, E. L., and J. F. O'Donnel. 1984. An evaluation of hospices in the New York State Hospice Demonstration Program. *Inquiry* 21, no. 4: 338–348.

Harrison, J. P., D. Ford, and K. Wilson. 2005. The impact of hospice programs on U.S. hospitals. *Nursing Economics* 23, no. 2: 78–90.

Health Care Strategic Management. 2004. Hospice companies benefit from favorable Medicare rates. *Health Care Strategic Management* 22, no. 1: 13–14.

Hoyer, T. 2007. The future of hospice. *Caring*, November.

Hughes, S. L, J. Cummings, F. Weaver, et al. 1992. A randomized trial of the cost effectiveness of VA hospital-based home care for the terminally ill (Veterans Affairs). *Health Services Research* 26, no. 6: 801–817.

Huskamp, H. A., M. Beeuwkes Buntin, V. Wang, et al. 2001. Providing care at the end of life: Do Medicare rules impede good care? *Health Affairs* 20, no. 3: 204–211.

Institute of Medicine, Committee on Care at the End of Life. 1997. *Approaching death: Improving care at the end of life*. Washington, DC: National Academy Press.

Iwashyna, T. J., V. W. Chang, J. X. Zhang, et al. 2002. The lack of effect of market structure on hospice use. *Health Services Research* 37, no. 6: 1531–1551.

Kaiser Family Foundation. 2007. *Medicare spending and financing*. Medicare fact sheet 7305–02, June. Washington, DC: KFF.

Kane, R. L., J. Wales, L. Bernstein, et al. 1984. A randomized controlled trial of hospice care. *Lancet* 1984, no. 1: 890–894.

Kidder, D. 1998. Hospice: Does it still save Medicare money? *Journal of Palliative Medicine* 1, no. 2: 151–155.

Kidder, D. 1992. The effects of hospice coverage on Medicare expenditures. *Health Services Research* 27, no. 2: 195–217.

Kinzbrunner, B. M. 1998. Hospice: 15 years and beyond in the care of the dying. *Journal of Palliative Medicine* 1, no. 2: 127–137.

Lindrooth, R. C., and B. A. Weisbrod. 2007. Do religious nonprofit and for-profit organizations respond differently to financial incentives? The hospice industry. *Journal of Health Economics* 26, no. 2: 342–357.

Lorenz, K., J. Lynn, S. C. Morton, et al. 2004. *End-of-life care and outcomes. Evidence report/technology assessment no. 110*. Prepared by the Southern California Evidence-Based Practice Center. Contract no. 290–02–0003. AHRQ publication no. 05–E004–2. Rockville, MD: Agency for Healthcare Research and Quality.

Lynn, J., and D. M. Adamson. 2003. Living well at the end of life: Adapting health care to serious chronic illness in old age. Rand Health white paper. Santa Monica, CA: RAND.

Lynn, J., F. E. Harrell, F. Cohn, et al. 1997. Prognoses of seriously ill hospitalized patients on the days before death: Implications for patient care and public policy. *New Horizons* 5, no. 1: 56–61.

McCue, M. J., and J. M. Thompson. 2005. Operational and financial performance of publicly traded hospice companies. *Journal of Palliative Medicine* 8, no. 6: 1196–1206.

Medicare Payment Advisory Commission. 2007. *A data book: Healthcare spending and the Medicare program*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2006. *Report to the Congress: Increasing the value of Medicare*. Washington, DC: MedPAC.

Miller, P. J., and P. B. Mike. 1995. The Medicare hospice benefit: Ten years of federal policy for the terminally ill. *Death Studies* 19, no. 6: 531–542.

Miller, S. C., O. Intrator, P. Gozalo, et al. 2004. Government expenditures at the end of life for short- and long-stay nursing home residents: Differences by hospice enrollment status. *Journal of the American Geriatrics Society* 52, no. 8: 1284–1292.

Miller, S. C., O. Intrator, J. Burdzovic Andreas, et al. 2003. *Factors associated with hospice utilization*. Report for the Agency for Healthcare Research and Quality. AHRQ–2005–27. Rockville, MD: AHRQ. July.

Mor, V., and H. Birnbaum. 1983. Medicare legislation for hospice care: Implications of National Hospice Study data. *Health Affairs* 2, no. 2: 80–90.

Mor, V., and D. Kidder. 1985. Cost savings in hospice: Final results of the National Hospice Study. *Health Services Research* 20, no. 4: 407–422.

National Alliance for Hospice Access. 2006. Letter from D. Doucher, NAHA, Scottsdale, AZ, to K. Linehan, MedPAC, Washington, DC. On file.

National Hospice and Palliative Care Organization. 2005. *2004 national summary statistics and trends*. Alexandria, VA: NHPCO.

Nicosia, N., E. Reardon, K. Lorenz, et al. 2006. *The Medicare hospice payment system: A preliminary consideration of potential refinements*. RAND Health working paper no. 06–4, for the Medicare Payment Advisory Commission. Arlington, VA: RAND Health.

Odyssey HealthCare, Inc. 2007. *Annual report to shareholders, form 10-K*. Filed with the Securities and Exchange Commission, Washington, DC, February 28. Dallas, TX: Odyssey HealthCare, Inc.

Odyssey HealthCare, Inc. 2004. *Annual report to shareholders, form 10-K*. Filed with the Securities and Exchange Commission, Washington, DC, March 11. Dallas, TX: Odyssey HealthCare, Inc.

Office of the Actuary, Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2008. Unpublished Medicare spending projections prepared in support of Annual Trustees' Report. March.

Office of Inspector General, Department of Health and Human Services. 1997. *Hospice patients in nursing homes*. OEI–05–95–00250. Washington, DC: OIG.

Pyenson, B., S. Connor, K. Fitch, et al. 2004. Medicare cost in matched hospice and non-hospice cohorts. *Journal of Pain and Symptom Management* 28, no. 3: 200–210.

Rhodes, R. L., J. M. Teno, and S. R. Connor. 2007. African American bereaved family members' perceptions of the quality of hospice care: Lessened disparities, but opportunities to improve remain. *Journal of Pain and Symptom Management* 34, no. 5: 472–479.

Spector, W. D., and V. Mor. 1984. Utilization and charges for terminal cancer patients in Rhode Island. *Inquiry* 21, no. 4: 328–337.

Taylor, D. H., Jr., J. Ostermann, C. H. Van Houtven, et al. 2007. What length of hospice use maximizes reduction in medical expenditures near death in the U.S. Medicare program? *Social Science and Medicine* 65, no. 7: 1466–1478.

United Press International. 1982. Tax measure offers new benefits for hospice care of terminally ill. *New York Times*, September 1.

Virnig, B. A., I. S. Moscovice, S. B. Durham, et al. 2004. Do rural elders have limited access to Medicare hospice services? *Journal of the American Geriatrics Society* 52, no. 5: 731–735.

VistaCare, Inc. 2007. *Form 10-K*. Filed with the Securities and Exchange Commission, Washington, DC, December 11. Scottsdale, AZ: VistaCare, Inc. March 16.

VistaCare, Inc. 2006. *Form 10-K*. Filed with the Securities and Exchange Commission, Washington, DC. Scottsdale, AZ: VistaCare, Inc.

Wharton School of the University of Pennsylvania. 2006. The business of hospice care. *Knowledge@Wharton* series, no. 1493. May 31. http://knowledge.wharton.upenn.edu/.