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Complementary and Alternative Therapies in Hospice: The National Home and Hospice Care Survey: United States, 2007

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Abstract

Objective—This report presents national estimates on the provision and use of complementary and alternative therapies (CAT) in hospice. Comparisons of organizational characteristics of hospice care providers are presented by whether the provider offered CAT. Comparisons of selected characteristics of patients discharged from hospice are presented by whether they received care from a provider that offered CAT, and whether they received a CAT service.

Methods—Estimates are based on data from the 2007 National Home and Hospice Care Survey (NHHCS), conducted by the Centers for Disease Control and Prevention's National Center for Health Statistics.

Results—In 2007, 41.8% of hospice care providers offered CAT services, had a CAT provider on staff or under contract, or both. Among hospice care providers offering CAT, over one-half offered massage (71.7%), supportive group therapy (69.0%), music therapy (62.2%), pet therapy (58.6%), or guided imagery or relaxation (52.7%). Of the hospice care providers that offered CAT, 21.5% had at least one discharged hospice patient who received CAT during hospice care. Overall, 4.9% of all discharged hospice patients received at least one CAT from the hospice care provider. Over one-half of discharged patients (56.5%) received care from a provider that offered CAT, and of those, 8.6% received at least one CAT from the hospice care provider during their stays. There were no differences in demographics, health, functional status, or admission diagnoses between patients discharged from hospice either by whether they received care from a provider that offered CAT or whether they received CAT.

Keywords: end-of-life and palliative care • quality of care • pain management • advance directives

persons with cancer and other chronic conditions (3–6). A primary focus of both CAT and end-of-life hospice care is to provide comfort and alleviate pain and symptoms such as dyspnea or anxiety.

Clinical studies have found that some types of CAT use are associated with abatement of symptoms, including anxiety and pain, and improvements in mood and sense of control (7–15). Use of CAT may provide another avenue in addition to or instead of allopathic medicine to address the hospice goal of improving quality of life at the end of life. Hospice funding for CAT is currently primarily provided by volunteers or donations rather than by health insurance (16).

Several studies have found that the provision and use of CAT were relatively common in end-of-life care; at least one-half of hospices offered CAT, and approximately one-third to one-half of patients at end of life used some form of CAT. However, these studies were not based on nationally representative information, and thus their generalizability is limited (17–20). Using nationally representative data, this report compares hospice care providers that offer CAT to those that do not offer CAT and discharged hospice patients who did receive CAT to those who did

Introduction

The use of complementary and alternative therapies (CAT)—products and practices not part of standard care

(1)—is widespread, with a 2007 survey noting that almost 40% of noninstitutionalized U.S. adults used some form of CAT in the previous 12 months. (2) CAT is commonly used by



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not receive CAT. We compare hospice care providers that offer CAT to those that do not because there may be organizational differences related to the decision to offer or not offer CAT, especially since CAT is often not covered by health insurance. We compare discharged hospice patients who received CAT to those who did not to explore whether certain patient characteristics are related to CAT access or CAT use.

Methods

Data source

Data from hospice care providers participating in the 2007 National Home and Hospice Care Survey (NHHCS) were used for these analyses. The 2007 NHHCS is one in a series of nationally representative, cross-sectional sample surveys of U.S. home health and hospice agencies. It is designed to provide descriptive information on home health and hospice agencies, their staffs, their services, and their patients. NHHCS was first conducted in 1992 and was repeated in 1993, 1994, 1996, 1998, 2000, and most recently in 2007.

All agencies that participated in the 2007 NHHCS were either certified by Medicare, Medicaid, or both, or were licensed by a state to provide home health services, hospice services, or both and currently or recently served home health or hospice patients. Agencies that provided only homemaker services or housekeeping services, assistance with instrumental activities of daily living (IADLs), or durable medical equipment and supplies were excluded from the survey. Further information on the sampling, survey design, and other survey methodology is available in the “Technical Notes” and documentation provided at: <http://www.cdc.gov/nchs/nhhcs.htm> and in Dwyer et al. (2010) (21).

The 2007 NHHCS collected information from each participating, sampled hospice care provider on a sample of patients discharged from hospice during a 3-month period starting 4 months before the month of the interview. A sample of patients

discharged from hospice care is more likely to include patients with short stays and multiple discharges compared with a sample drawn from hospice patients receiving care at the time of sample selection. Thus, the sample analyzed in this study—patients discharged from hospice care—is representative only of discharges from hospice care, rather than hospice patients being treated by the agency at the time of the survey. For the remainder of this report, patients discharged from hospice care are termed “discharged patients.”

Data analysis

All analyses were performed in SAS-callable SUDAAN to account for sampling weights and the complex sampling design (22). Differences among subgroups were evaluated using chi-square, and *t*-tests were used to test for significance at the $p < 0.05$ level. However, if the difference between subgroups was smaller than the percentage of missing data for the variable of interest, significance testing was not performed. Differences between subgroups were also not evaluated if one of the estimates was not considered reliable (as defined in the “Technical Notes” section on Standard errors). No adjustments were made for multiple comparisons. The difference between any two estimates is mentioned in the text only if it is statistically significant. However, if a comparison is not made or mentioned, it may or may not be significant. Otherwise, terms such as “similar” or “no significant differences” are used to denote that the estimates being compared are not statistically significantly different.

Four separate logistic regression models were run, each using the same independent variables. Three of these models were run to identify the independent contributions of variables to whether a hospice care provider offered CAT. Among these three models, one included all hospice care providers, the second included only providers that offered hospice care only, and the third included only providers that offered both home health and hospice care. The

fourth regression model examined the independent contributions of variables to whether at least one discharged patient used CAT, with the population including only providers that offered CAT. All models included the following variables: whether the hospice care provider offered only hospice care or both home health and hospice care; ownership (for profit; non-profit, government, and other); chain membership (yes, no); main referral source (hospital, physician, and all other); hospice type (freestanding; hospital and nursing home based); whether the provider had dedicated hospice facilities (yes, no); contract with a residential care provider (yes, no); contract with a hospital (yes, no); contract with managed care or provide insurance provider (yes, no); contract with a skilled nursing facility (yes, no); location (metropolitan statistical area; micropolitan and other); number of years providing hospice care (20 years or fewer, more than 20 years); number of hospice patients served at time of survey (35 or fewer, more than 35); and number of services offered (mean or fewer, greater than the mean). The adjusted percentages reported are the predicted marginal probabilities estimated for the average hospice care provider after adjusting for all other variables noted in the model. For further description see the “Technical Notes.”

In this report, hospice care providers were categorized as providing CAT if they either offered CAT or had CAT providers on staff or contract. All other hospice care providers, including 6.4% that were missing information on whether they offered CAT or had CAT providers, are categorized as not providing CAT. Information on whether discharged hospice patients received a CAT from the agency was missing for 1.5% of discharged hospice patients. Discharged hospice patients with missing information on whether they received a CAT from the agency were categorized as not receiving CAT. For further explanation see the “Technical Notes.”

For the categorical variables used in the analyses, nonresponses, ranging from 0 to 6.9%, were recoded as “unknown” and included in the analyses. Marital status at admission had

a nonresponse rate of 5.6% and whether patients had a colostomy or difficulty controlling bowels had a nonresponse rate of 6.9%. The rest of the categorical variables had nonresponse rates of less than 5%, with the majority less than 2%. For continuous variables, unknowns were excluded when calculating estimates. The percentage missing for continuous variables used in this report are: number of hospice patients at time of survey (2.0%), number of beds in dedicated hospice facilities (0.1%), number of years the agency has provided hospice care (1.9%), and length of hospice service (0.2%). The ranges of values for the three continuous variables were large, and the means and medians were quite different. Because the median is less affected by the range of responses, medians are presented in the tables.

Results

The proportion of hospice care providers offering CAT

- In 2007, 41.8% of all hospice care providers offered CAT. The proportion offering CAT was greater among providers of hospice care only (54.0%) than providers of both home health and hospice care (22.9%) (Figure 1 and Tables 1 and III).

Types of CAT offered by hospice care providers

- Of hospice care providers offering CAT, the most commonly provided were massage (71.7% of providers), supportive group therapy (69.0%), music therapy (62.2%), pet therapy (58.6%), guided imagery and relaxation (52.7%), and therapeutic touch (48.3%) (Figure 2).

Characteristics of hospice care providers by whether they offered CAT

- On average, hospice care providers offered 19 services excluding CAT (median 20). Hospice care providers that offered CAT offered significantly more services overall (excluding

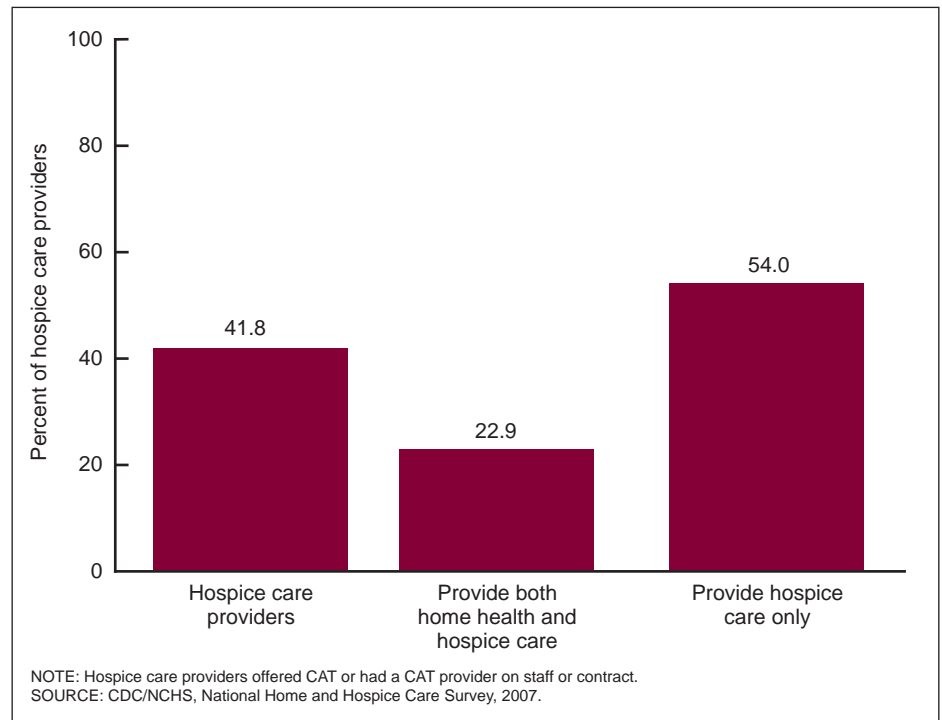


Figure 1. Percentage of hospice care providers offering complementary and alternative therapies (CAT): United States, 2007

- CAT) than those that did not offer CAT (Table 2).
- Ownership and total number of services offered were significantly associated with offering CAT, among all hospice care providers. After

adjusting for other differences among agencies, 28.7% of for-profit providers (95% confidence interval (CI) = 15.9%–41.4%) and 51.9% (95% CI = 43.0%–60.8%) of non-profit, government and other

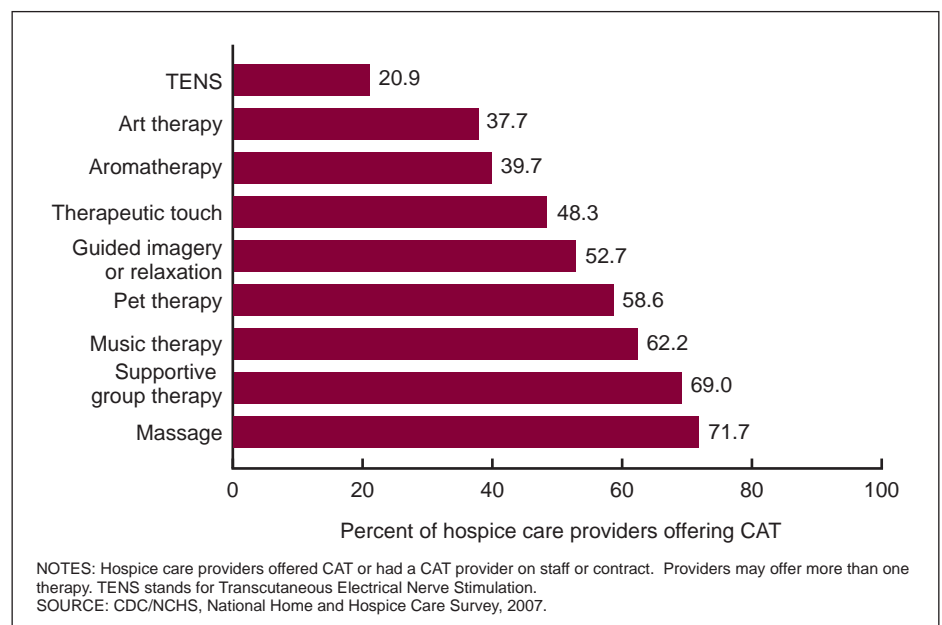


Figure 2. Types of complementary and alternative therapies (CAT) offered by hospice care providers: United States, 2007

providers offered CAT. In facilities that offered the mean or fewer services 28.2% offered CAT (95% CI = 16.8%–39.5%), compared with 51.6% of providers that offered more than the mean number of services (95% CI = 41.6%–61.7%). (Results not shown.)

- Chain affiliation, ownership, and number of services provided were significantly associated with whether the provider offered CAT. This finding applied to providers of hospice care only. Adjusted models estimate that 38.4% of for-profit providers (95% CI = 23.3%–53.4%) and 68.3% of non-profit, government, and other providers offered CAT (95% CI = 57.6%–79.0%). In facilities that offered the mean or fewer services 38.3% offered CAT (95% CI = 23.9%–52.7%), compared with 70.1% of providers that offered more than the mean number of services (95% CI = 58.7%–81.5%). Among providers that were part of a chain 75.1% offered CAT (95% CI = 64.0%–86.2%) compared with 47.9% of unaffiliated providers (95% CI = 35.0%–60.8%). (Results not shown.)
- Ownership and contracts with hospitals were significantly associated with whether providers of both home

health and hospice care offered CAT. Adjusted models estimate that 8.6% of for-profit providers (95% CI = 0.1%–17.1%) and 31.0% of non-profit, government, and other providers offered CAT (95% CI = 20.3%–41.6%). Among providers with contracts with hospitals 34.4% offered CAT (95% CI = 23.6%–45.3%), compared with 12.5% of providers without contracts with hospitals (95% CI = 5.6%–19.4%). (Results not shown.)

Characteristics of patients discharged from hospice by availability and use of CAT

- Although 56.2% of discharged patients received care from a provider of hospice care that offered CAT, only 5.1% of all discharged patients received at least one CAT from the provider during their episode of care (Figure 3).
- Discharged patients who received care from a hospice care provider who offered CAT had a longer mean length of service (71 days) than those who received care from a hospice care provider that did not offer CAT (58 days) (Table 3).
- A greater proportion of discharged patients receiving care from a hospice

care provider offering CAT had impaired cognitive functioning (41.0%) than discharges receiving care from a provider not offering CAT (34.6%). Table 4 shows selected admission diagnoses of discharged patients from hospice, by availability of CAT.

- Among discharged patients receiving care from a hospice care provider that offered CAT, 8.6% received at least one CAT from the provider during their episode of care (Table 5).
- A smaller proportion of discharged patients who received CAT from the hospice care provider were married (32.3%) than discharged patients who did not receive CAT (41.5%).
- The majority of all discharged patients had a do not resuscitate order (DNR), but the proportion varied by whether the discharged patient received CAT from the provider. Among discharged patients who received CAT, 91.5% had a DNR, greater than the 75.8% who received care from providers not offering CAT. A greater proportion of discharged patients who did not use CAT although it was available, had a DNR (82.9%) than discharged patients who received care from providers not offering CAT (Figure 4).
- Among discharged patients who received CAT, 60.8% had a durable power of attorney (DPA) or health care proxy or surrogate, greater than the 39.2% who did not use CAT, although it was available, and patients receiving hospice care from providers not offering CAT (39.5%).
- Among discharged patients who received CAT, 36.3% had a living will greater than the 22.4% receiving hospice care from providers not offering CAT.
- The proportion of discharged patients with a standing order for pain medication was greater among those who had received CAT (82.3%) than among those who did not receive CAT, although it was available, (66.6%) and those receiving care from a provider that did not offer CAT (60.8%) (Figure 5).

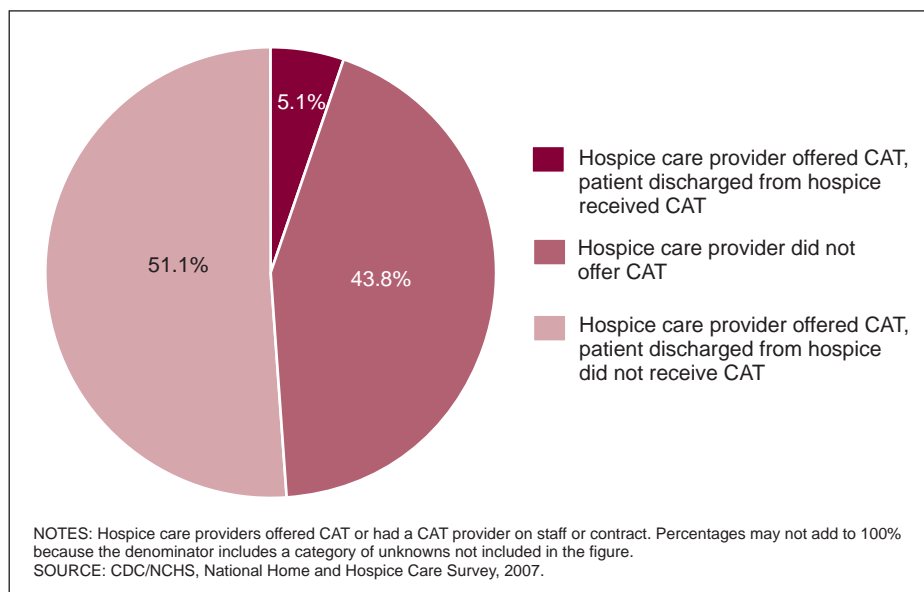


Figure 3. Discharged patients by availability and use of complementary and alternative therapies (CAT): United States, 2007

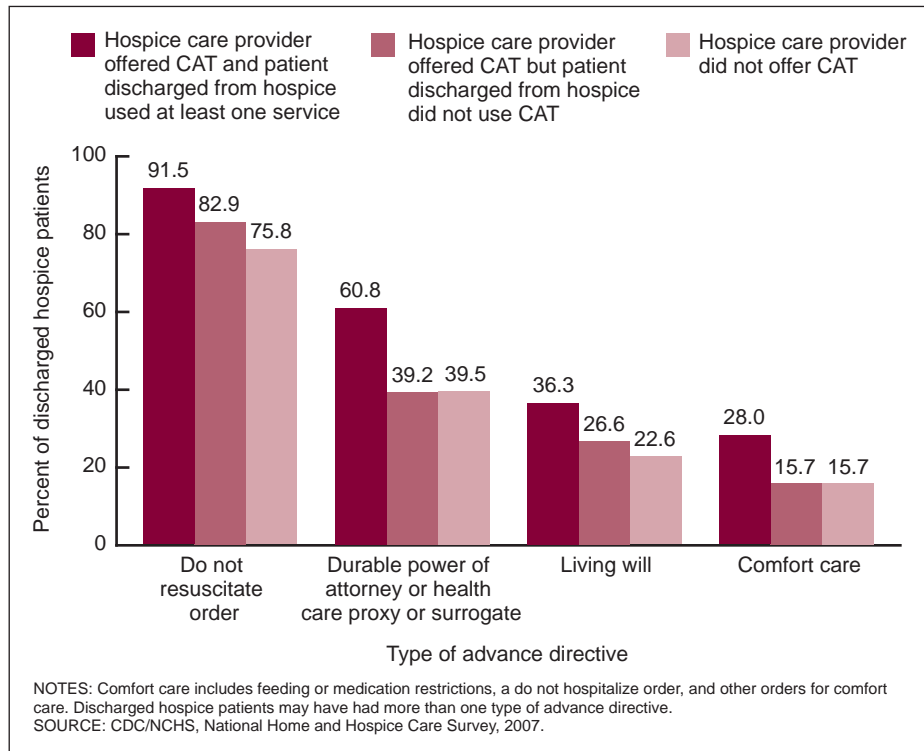


Figure 4. Advance directives among discharged patients by availability and use of complementary and alternative therapies (CAT): United States, 2007

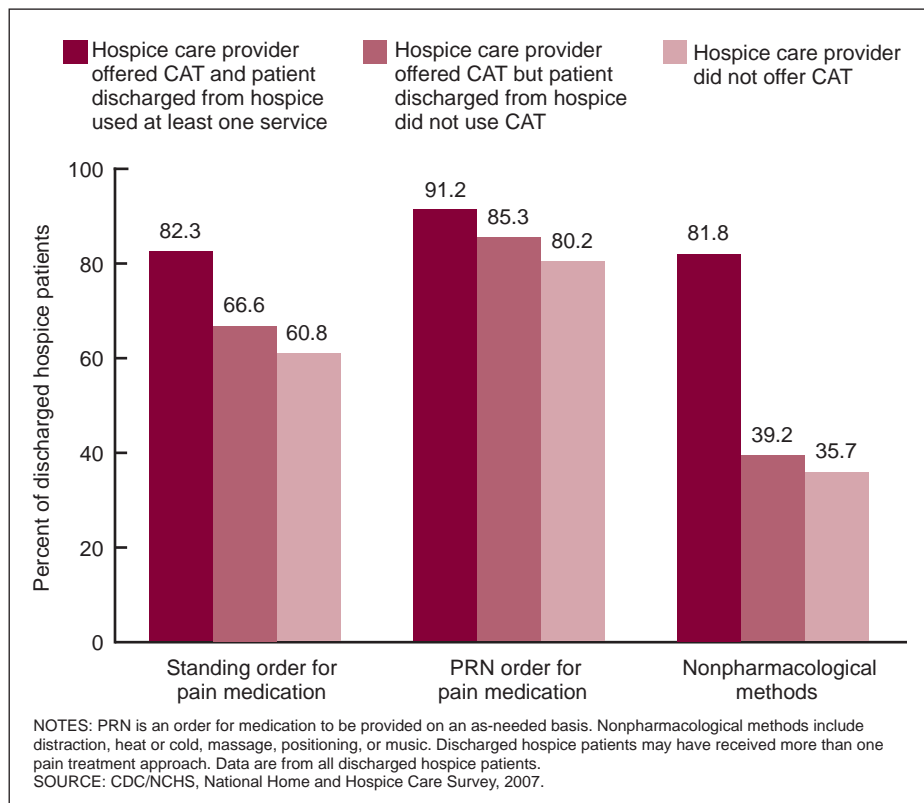


Figure 5. Pain treatment among discharged patients by availability and use of complementary and alternative therapies (CAT): United States, 2007

- Discharged patients who received CAT were more likely to have a PRN order for pain medication (91.2%) than discharged patients who received care from a provider not offering CAT (80.2%).
- A greater proportion of discharged patients who received CAT received nonpharmacological methods for pain control (81.8%) than those who did not receive CAT (39.2%), or received care from a provider that did not offer CAT (35.7%).

Characteristics of hospice care providers that offered CAT by whether at least one discharged patient received at least one CAT from the provider

- Twenty-one and one-half percent of hospice care providers that offered CAT had at least one discharged patient who received at least one CAT from the agency. (Results not shown.)
- Having a contract with a hospital was related to whether at least one patient used CAT among hospice care providers that offered CAT controlling for other factors. Among hospice care providers that offered CAT 25.7% of providers with contracts with a hospital (95% CI = 16.6%–35.0%) and 6.5% of providers without contracts with a hospital had at least one patient who used CAT (95% CI = 0–14.2%). (Results not shown.)

Discussion

Results from NHHCS indicate that 41.8% of all hospice care providers offered CAT; however, it was more common for hospice care providers to offer CAT than for discharged patients to receive CAT from the provider. More than one-half of providers that offered CAT offered massage, supportive group therapy, music and pet therapy, and guided imagery and relaxation. Providers of hospice care only were more likely to offer CAT than providers

of both home health and hospice care. Of the providers that offered CAT, about one-fifth had at least one discharged patient who used at least one CAT from the provider during an episode of hospice care.

Hospice care providers that were non-profit or government owned were more likely to offer CAT. Additional characteristics associated with offering CAT varied depending on whether the provider offered both home health and hospice care or hospice care only. Providers of hospice care only, which offered a greater number of services and were part of a chain, were more likely to offer CAT, while providers of both hospice and home health care with contracts with hospitals were more likely to offer CAT. However, the facility characteristics associated with whether a provider offered CAT were not the same as the characteristics associated with whether at least one patient used CAT. Among hospice care providers offering CAT, only having contracts with hospitals was associated with having at least one patient use CAT.

The proportion of discharged hospice patients receiving CAT is much lower than previously published estimates of use of CAT among the nonhospice population (2). Several factors may account for this difference. NHHCS asked only about CAT provided by the hospice care provider. However, patients may have been receiving CAT through sources other than the hospice care provider. These services would not be included as a service from the NHHCS provider. Kutner et al. found that most CAT was not provided by hospice personnel (18). In addition, data from the National Health Interview Survey on trends in personal health expenditures on CAT suggest a shift from receipt of CAT from health care professionals to increasing use of self-care therapies (23). The definition of CAT may also be an important factor. A hospice may have offered therapies, such as supportive group therapy, music, or pet therapy, which were considered CAT for NHHCS, but which the hospice survey respondent did not consider CAT.

There were very few differences in demographics, health, functional status, and admission diagnosis among discharged hospice patients by availability and use of CAT. The only significant differences found in the variables analyzed were that a greater proportion of patients discharged from hospice providers offering CAT had impaired cognitive functioning and a smaller proportion of discharged hospice patients that used CAT were married.

However, there were some consistent differences in some aspects of quality of hospice care by availability and use of CAT. The length of time a discharged patient received hospice care was longer among discharged patients receiving care where CAT was offered compared with patients where CAT was not offered. There were also consistent differences in pain management approaches and advance directive adoption between discharged patients receiving CAT and those receiving care from a provider that did not offer CAT. Compared with patients where CAT was not offered, patients who received CAT were more likely to have a standing order for pain management, a PRN order for pain management, a DNR, a DPA or health care proxy, and a living will.

Although NHHCS lacks both the design and content to explain these observed associations, it is possible that discharged patients that are more likely to have an advance directive are also more likely to be more selective about their care. They may choose providers that offer more amenities, CAT being one of them, or be more proactive in requesting approaches for pain management. Conversely, providers offering CAT may be more flexible and proactive in meeting their patients' perceived needs, including encouraging completion of advance directives, and approaches toward pain management, as well as offering a greater variety of services.

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Table 1. Characteristics of hospice care providers, by whether they offer complementary and alternative therapies: United States, 2007

Provider characteristic	Provide hospice care			Provide hospice care only			Provide both home health and hospice care		
	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹
Total	3,700	1,500	2,100	2,200	1,200	1,000	1,400	300	1,100
	Number								
	Number			Number			Number		
	Percent			Percent			Percent		
Ownership									
For profit	1,200	†28.5	37.9	900	†33.1	†46.7	†400	*	†29.7
Not for profit, including government	2,400	71.5	62.1	1,300	66.9	53.3	1,100	88.1	70.3
Location of agency:									
Metropolitan statistical area ²	2,400	74.4	61.3	1,600	80.2	†63.4	800	†53.4	59.3
Micropolitan and other statistical area ^{3,4}	1,200	25.6	38.7	600	19.8	36.6	600	46.6	40.7
Affiliation									
Chain	900	†28.9	19.9	600	†33.2	†21	†300	*	†19
Independent	2,800	71.1	80.1	1,600	66.8	79.0	1,200	87.2	81.0
Total median number of patients served at time of survey	64	63	64	47	57	34	133	144	126
Median number of hospice patients at time of survey	32	47	24	47	57	34	19	27	18
Major referral source									
Hospital	1,300	39.7	32.0	700	38.1	†24.7	600	†45.7	38.7
Physicians office	1,600	43.6	45.5	900	43.1	41.9	700	†45.4	48.9
All other ⁵	600	†15.8	18.1	500	*	†24.4	†200	*	*
Type of hospice									
Freestanding	2,100	68.3	47.7	1,700	80.8	71.2	400	*	†25.9
Hospital, nursing home, or home health based	1,500	31.6	48.0	400	†19.1	†19.8	1,100	77.1	74.0
Operates dedicated hospice facilities or units									
Yes	600	30.1	†8.9	600	34.7	†14.9	†100	*	*
Median number of beds	11	12	9	11	12	8	12	13	11
No	2,900	69.9	86.7	1,600	65.3	76.1	1,400	86.6	96.6
Formal contracts with outside agencies or organizations									
Skilled nursing facility:									
Yes	2,800	82.2	72.4	1,700	81.9	70.1	1,100	83.5	74.5
No	800	†17.8	23.2	†400	*	†20.9	300	*	25.4
Hospital									
Yes	2,400	75.7	59.2	1,700	75.4	76.6	700	76.8	43.1
No	1,100	24.3	36.5	†400	*	†14.4	700	†23.2	56.8
Managed care or private insurance provider									
Yes	1,900	56.5	49.3	1,200	53.3	50.7	800	68.0	48.0
No	1,700	43.5	46.3	1,000	46.7	40.3	700	†32	51.9
Assisted living facility, board and care home, life care, or continuing care retirement community									
Yes	1,700	53.6	41.9	1,200	54.9	48.7	600	†48.8	35.6
No	1,900	46.4	53.8	1,000	45.1	42.3	900	51.2	64.3
Number of years providing hospice care									
20 or fewer (1987 and later)	2,400	63.7	65.0	1,400	61.9	64.6	1,000	70.1	65.3
More than 20 (prior to 1987)	1,100	35.0	28.3	700	37.1	25.8	400	†27.4	†30.7

† Estimate does not meet standards of reliability or precision because the sample size is between 30 and 59, or sample size is greater than 59 but has a relative standard error of 30% or more.

* Estimate does not meet standards of reliability or precision because the sample size is less than 30.

¹CAT is complementary and alternative therapies. Providers were categorized as offering CAT, if they offered CAT, or had CAT providers on staff or contract. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

²A metropolitan statistical area is a county or group of contiguous counties that contains at least one urbanized area of 50,000 or more population. May also contain other counties that are economically and socially integrated with the central county as measured by commuting.

³A micropolitan statistical area is a nonmetropolitan county or group of contiguous nonmetropolitan counties that contains an urban cluster of 10,000 to 49,999 persons. May include surrounding counties if there are strong economic ties between the counties, based on commuting patterns.

⁴Other locations are nonmetropolitan counties that are not classified as part of a micropolitan statistical area.

⁵Includes nursing home; assisted living facility; outpatient medical or surgical center; rehabilitation facility; patient, family, or friends; other home health or hospice agency; insurance provider or payer source; community organization; and other.

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on the unrounded numbers.

DATA SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.

Table 2. Services offered by hospice care providers, by whether offer complementary and alternative therapies: United States, 2007

Services ²	Provide hospice care				Provide hospice care only				Provide both home health and hospice care			
	Offer CAT ¹		Do not offer CAT ¹		Offer CAT ¹		Do not offer CAT ¹		Offer CAT ¹		Do not offer CAT ¹	
	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error	Percent	Standard error
Total	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .	100.0	. . .
Pastoral services	99.7	(0.2)	86.8	(4.4)	99.7	(0.2)	88.1	(8.0)	99.7	(0.2)	85.7	(4.1)
Grief or bereavement counseling	99.5	(0.2)	87.9	(4.3)	99.6	(0.2)	87.7	(7.9)	99.4	(0.6)	88.2	(3.9)
Physical therapy	99.0	(0.4)	83.3	(4.6)	99.2	(0.4)	81.3	(7.8)	98.5	(1.4)	85.2	(5.2)
Medical social services	98.0	(0.6)	89.1	(4.3)	98.3	(0.7)	85.6	(7.9)	96.6	(1.3)	92.3	(3.4)
Wound care	96.7	(1.3)	90.0	(4.1)	97.7	(1.2)	83.3	(7.8)	93.3	(4.0)	96.2	(2.2)
Respite care	96.7	(0.9)	84.4	(4.5)	97.7	(1.0)	87.4	(7.9)	93.0	(2.1)	81.7	(4.8)
Occupational therapy	96.7	(1.0)	82.4	(4.3)	96.3	(1.2)	77.0	(7.7)	98.2	(1.4)	87.4	(3.8)
Volunteer services	96.3	(2.2)	87.8	(4.3)	96.2	(2.8)	90.4	(8.0)	96.6	(1.3)	85.4	(4.0)
ADLs assistance	95.0	(2.3)	81.8	(5.4)	95.2	(2.9)	84.5	(7.9)	94.2	(2.0)	79.3	(7.5)
Speech therapy or audiology	95.0	(1.4)	79.7	(4.5)	94.6	(1.7)	71.2	(7.9)	96.3	(1.7)	87.4	(3.9)
Skilled nursing	94.3	(2.9)	90.4	(4.1)	94.0	(3.5)	84.4	(7.8)	95.4	(3.4)	95.9	(2.2)
Pharmacy services	93.9	(1.5)	67.4	(4.7)	98.4	(1.2)	82.0	(7.8)	77.4	(4.6)	54.0	(6.4)
Durable medical equipment	93.0	(1.6)	67.8	(4.7)	99.9	(0.1)	84.5	(7.9)	68.0	(5.8)	52.4	(6.5)
Physician services	90.5	(2.0)	63.3	(5.2)	97.4	(0.8)	84.9	(7.8)	65.2	(6.3)	43.3	(6.5)
Dietary and nutritional services	90.3	(5.3)	81.3	(5.3)	88.1	(6.6)	77.8	(9.9)	98.2	(0.9)	84.6	(3.9)
Intravenous therapy	89.2	(4.2)	86.5	(4.4)	88.7	(5.3)	80.2	(7.9)	91.2	(3.8)	92.3	(3.4)
Referral services	85.8	(4.9)	61.7	(5.4)	85.2	(6.2)	76.2	(7.8)	87.8	(2.9)	48.3	(6.5)
Ethical issues counseling	78.8	(4.0)	53.3	(5.2)	86.2	(4.3)	62.0	(8.0)	51.5	(6.4)	45.3	(6.9)
Continuous home care	77.0	(5.5)	64.5	(5.3)	79.7	(6.9)	76.6	(7.9)	67.1	(5.4)	53.3	(6.8)
Respiratory therapy	73.4	(5.2)	45.9	(5.2)	81.5	(6.3)	62.9	(7.8)	†43.6	(†6.2)	30.3	(5.8)
Companion services	71.9	(4.6)	35.8	(4.7)	76.9	(5.3)	46.0	(7.9)	†53.7	(†6.3)	26.3	(5.5)
Homemaker services	65.6	(6.2)	48.0	(5.1)	65.5	(7.7)	52.6	(8.3)	66.2	(5.5)	43.8	(6.2)
Enterostomal therapy	63.4	(6.5)	52.7	(5.3)	59.1	(7.9)	35.3	(6.6)	79.0	(5.5)	68.7	(5.6)
Mental health services	58.8	(6.0)	30.6	(5.3)	59.2	(7.5)	†28.4	(†7.2)	57.3	(6.2)	†32.6	(†7.6)
Transportation services	53.4	(6.1)	27.2	(5.0)	61.5	(7.6)	44.6	(8.3)	*	(*)	†11.1	(†3.1)
Meals on Wheels	35.3	(6.4)	15.9	(3.7)	43.1	(7.8)	†25.9	(†7.0)	*	(*)	*	(*)
Podiatry	35.1	(6.2)	†12.0	(†2.7)	39.4	(7.6)	†15.7	(†4.3)	*	(*)	*	(*)
Median number of services provided (excluding complementary and alternative medicine)	22	(0.1)	18	(0.1)	23	(0.1)	20	(0.1)	21	(0.1)	17	(0.1)

. . . Category not applicable.

† Estimate does not meet standards of reliability or precision because the sample size is between 30 and 59, or sample size is greater than 59 but has a relative standard error of 30% or more.

* Estimate does not meet standards of reliability or precision because the sample size is less than 30.

(†) Standard errors accompanied by a dagger indicate the sample size is between 30 and 59, or the ratio of the standard error to the reported estimate is 30 percent or more.

(*) The standard error is not reported when the sample size for the estimate is less than 30, which does not meet the standards of reliability or precision.

¹CAT is complementary and alternative therapies. Providers were categorized as offering CAT if they either offered CAT or had CAT providers on staff or contract or both. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

²Providers of hospice care are required to offer the following services to participate in Medicare: nursing care (on a 24-hour basis) provided by or under the supervision of an RN functioning within a medically approved plan of care, medical social services under the direction of a physician, and counseling (including dietary and bereavement counseling) with respect to care of the terminally ill individual and adjustment to death. (Source: State Operations Manual, Section 2080B, Centers for Medicare and Medicaid Services, Department of Health and Human Services. Available from: (http://www.cms.gov/CertificationandCompliance/07_Hospices.asp.)

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on unrounded numbers.

DATA SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.

Table 3. Demographics, health, and functional status of discharged patients from hospice, by availability of complementary and alternative therapies: United States, 2007

All discharged hospice patients	Patients discharged from hospice		Patients who received care from provider that offered CAT ¹				Patients who received care from provider that did not offer CAT ¹			
	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error
	1,045,100	(42,741)	585,900	(42,567)	100.0	...	459,100	(39,370)	100.0	...
Age at discharge										
Under 65 years	177,000	(11,442)	98,400	(9,721)	16.8	(1.1)	78,600	(8,868)	17.1	(1.3)
65 to 74 years	161,000	(12,960)	91,000	(11,822)	15.5	(1.6)	70,000	(8,133)	15.2	(1.4)
75 to 84 years	308,000	(16,635)	164,300	(13,883)	28.0	(1.6)	143,600	(14,577)	31.3	(1.8)
85 years and over	399,100	(22,757)	232,100	(20,311)	39.6	(1.7)	166,900	(18,347)	36.4	(2.2)
Sex										
Female	575,500	(26,951)	335,200	(26,705)	57.2	(1.8)	240,300	(21,537)	52.3	(2.1)
Male	469,500	(24,781)	250,800	(20,970)	42.8	(1.8)	218,800	(22,202)	47.7	(2.1)
Race										
White	948,100	(39,266)	527,400	(38,785)	90.0	(1.4)	420,700	(35,829)	91.6	(1.4)
Nonwhite ²	96,900	(11,345)	58,500	(9,447)	10.0	(1.4)	38,400	(7,394)	8.4	(1.4)
Hispanic or Latino origin										
Hispanic or Latino	41,400	(7,556)	27,500	(6,980)	4.7	(1.1)	13,900	(3,205)	3.0	(0.7)
Not Hispanic or Latino	960,700	(41,533)	540,900	(39,946)	92.3	(1.4)	419,700	(37,911)	91.4	(1.7)
Marital status										
Married or living with partner	447,400	(24,883)	238,600	(21,103)	40.7	(1.9)	208,800	(20,953)	45.5	(2.4)
Widowed, divorced, separated, or never married	539,000	(27,708)	309,700	(25,961)	52.9	(2.3)	229,200	(22,814)	49.9	(2.4)
Length of service (in days)										
Mean length of hospice care (in days)	65	(3)	71	(5)	...	...	58	(4)	...	...
Median length of hospice care (in days)	16	(1)	18	(2)	...	...	15	(1)	...	...
Level of care										
Routine or continuous home care	802,100	(38,019)	439,200	(34,558)	75.0	(2.2)	362,900	(33,270)	79.0	(2.4)
General inpatient or respite care	228,100	(17,504)	138,500	(15,092)	23.6	(2.0)	89,600	(12,760)	19.5	(2.3)
Comatose										
Comatose	119,300	(10,669)	71,200	(9,341)	12.1	(1.3)	48,100	(7,093)	10.5	(1.2)
Not comatose	907,400	(38,756)	505,800	(37,749)	86.3	(1.7)	401,600	(34,818)	87.5	(1.5)
Continence										
Bladder:										
Has catheter or difficulty controlling bladder	767,400	(35,675)	434,600	(34,276)	74.2	(1.9)	332,800	(31,074)	72.5	(2.1)
No catheter or difficulty controlling bladder	246,500	(15,971)	135,200	(13,087)	23.1	(1.6)	111,300	(12,708)	24.2	(2.0)
Bowel:										
Has colostomy, ileostomy, or difficulty controlling bowels	542,100	(32,633)	322,700	(30,553)	55.1	(2.6)	219,400	(24,376)	47.8	(3.0)
No colostomy, ileostomy, or difficulty controlling bowels	431,200	(23,937)	226,000	(19,326)	38.6	(2.4)	205,200	(20,829)	44.7	(2.8)

See footnotes at end of table.

Table 3. Demographics, health, and functional status of discharged patients from hospice, by availability of complementary and alternative therapies: United States, 2007—Con.

All discharged hospice patients	Patients discharged from hospice		Patients who received care from provider that offered CAT ¹				Patients who received care from provider that did not offer CAT ¹			
	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error
Cognitive functioning ³										
No cognitive impairment	297,400	(20,405)	155,700	(15,135)	30.2	(2.0)	141,700	(17,793)	34.5	(2.9)
Occasional reminders or some assistance	254,900	(16,067)	138,300	(13,204)	26.9	(1.8)	116,600	(12,868)	28.4	(2.2)
Great deal of assistance in routine situations or severe cognitive impairment	353,400	(21,645)	211,000	(19,868)	41.0	(2.2)	142,300	(15,537)	34.6	(2.4)
Activities of daily living (ADL) ³										
Needs help with:										
1 to 3 ADLs	367,400	(24,609)	196,400	(19,917)	38.1	(2.6)	171,100	(20,067)	41.6	(2.9)
4 to 5 ADLs	535,300	(27,785)	306,700	(26,104)	59.6	(2.7)	228,600	(21,557)	55.6	(2.8)

. . . Category not applicable.

¹CAT is complementary and alternative therapies. Providers were categorized as offering CAT if they offered CAT or had CAT providers on staff or contract. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

²All other races.

³Hospice patients who were comatose or in a vegetative state at time of admission to the agency were not assessed for cognitive and ADL functioning and were excluded from these estimates.

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on unrounded numbers.

DATA SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.

Table 4. Selected admission diagnoses of discharged patients from hospice, by availability of complementary and alternative therapies: United States, 2007

Diagnosis and ICD–9–CM code ¹	Patients discharged from hospice		Patients who received care from provider that offered CAT ²				Patients who received care from provider that did not offer CAT ²			
	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error
All discharged hospice patients	1,045,100	(42,741)	585,900	(42,567)	100.0	. . .	459,100	(39,370)	100.0	. . .
Neoplasms (140–208, 230–234)	454,600	(24,919)	246,400	(21,468)	42.1	(2.0)	208,100	(21,131)	45.3	(2.1)
Diseases of the circulatory system (390–459)	165,100	(12,450)	90,100	(10,035)	15.4	(1.4)	75,000	(9,640)	16.3	(1.6)
Symptoms, signs, and ill-defined conditions (780–799)	127,400	(10,482)	73,400	(8,410)	12.5	(1.2)	54,100	(7,862)	11.8	(1.5)
Diseases of the nervous system and sense organs (320–389)	81,400	(8,350)	50,500	(6,839)	8.6	(0.9)	30,900	(5,710)	6.7	(1.0)
Diseases of the respiratory system (460–519)	77,900	(6,828)	43,700	(5,662)	7.4	(0.8)	34,300	(4,788)	7.5	(0.9)
Diseases of the genitourinary system (580–629)	31,700	(4,613)	20,400	(3,926)	3.5	(0.6)	11,300	(2,678)	2.5	(0.6)
Diseases of the digestive system (520–579)	18,100	(3,477)	†11,900	(†3,003)	†2.0	(†0.5)	†6,200	(†1,828)	†1.4	(†0.4)

. . . Category not applicable.

† Estimate does not meet standards of reliability or precision because the sample size is between 30 and 59, or the sample size is greater than 59 but has a relative standard error of 30% or more.

(†) Standard errors accompanied by a dagger indicate the sample size is between 30 and 59, or the ratio of the standard error to the reported estimate is 30% or more.

¹Based on the *International Classification of Diseases, Ninth Revision, Clinical Modification*.

²CAT is complementary and alternative therapies. Providers were categorized as offering CAT if they offered CAT or had CAT providers on staff or contract. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on the unrounded numbers.

Table 5. Demographics, health, and functional status of discharged patients who received care from a hospice provider that offered complementary and alternative therapies, by use: United States, 2007

Characteristic	Discharged patients who received hospice care from a provider that offered CAT ¹		Patients who received at least one CAT from the provider during their hospice stay				Patients who did not receive CAT from the provider during their hospice stay			
	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error
All discharged hospice patients	585,900	(42,567)	50,400	(11,917)	100.0	0.0	535,500	(39,937)	100.0	0.0
Age at discharge										
Under 65 years	98,400	(9,721)	†8,500	(†2,698)	†16.9	(†4.1)	89,900	(8,924)	16.8	(1.1)
65 to 74 years	91,000	(11,822)	†8,600	(†2,393)	†17.1	(†5)	82,400	(11,412)	15.4	(1.7)
75 to 84 years	164,300	(13,883)	†11,900	(†4,246)	†23.6	(†4.4)	152,500	(13,335)	28.5	(1.7)
85 years and over	232,100	(20,311)	21,400	(6,228)	42.5	(5.5)	210,700	(18,566)	39.3	(1.7)
Sex										
Female	335,200	(26,705)	28,500	(6,518)	56.4	(4.9)	306,700	(25,220)	57.3	(1.9)
Male	250,800	(20,970)	22,000	(6,305)	43.6	(4.9)	228,800	(19,674)	42.7	(1.9)
Race										
White	527,400	(38,785)	47,300	(10,806)	93.8	(2.5)	480,100	(36,473)	89.7	(1.5)
Nonwhite ²	58,500	(9,447)	*	(*)	*	(*)	55,400	(9,004)	10.3	(1.5)
Hispanic or Latino origin										
Hispanic or Latino	27,500	(6,980)	*	(*)	*	(*)	26,300	(6,959)	4.9	(1.2)
Not Hispanic or Latino	540,900	(39,946)	47,700	(10,803)	94.5	(2.2)	493,300	(37,392)	92.1	(1.5)
Marital status										
Married or living with partner	238,600	(21,103)	16,300	(3,865)	32.3	(4.3)	222,400	(20,507)	41.5	(2.1)
Widowed, divorced, separated, or never married	309,700	(25,961)	32,200	(8,789)	63.9	(5.8)	277,500	(23,877)	51.8	(2.5)
Length of service (in days)										
Mean length of hospice care (in days)	71	(5)	101	(23)	...	...	69	(5)	...	...
Median length of hospice care (in days)	18	(2)	28	(11)	...	...	17	(1)	...	...
Level of care										
Routine or continuous home care	439,200	(34,558)	35,000	(7,297)	69.3	(5.9)	404,300	(32,755)	75.5	(2.3)
General inpatient or respite care	138,500	(15,092)	†15,500	(†5,712)	†30.7	(†5.9)	123,000	(14,200)	23.0	(2.1)
Comatose										
Comatose	71,200	(9,341)	*	(*)	*	(*)	65,300	(8,479)	12.2	(1.3)
Not comatose	505,800	(37,749)	44,400	(10,650)	88.0	(3.9)	461,400	(35,621)	86.2	(1.7)
Continence										
Bladder:										
Has catheter or difficulty controlling bladder	434,600	(34,276)	40,900	(11,245)	81.0	(5.6)	393,800	(31,664)	73.5	(2.0)
No catheter or difficulty controlling bladder	135,200	(13,087)	†9,500	(†2,678)	†18.8	(†5.6)	125,700	(12,546)	23.5	(1.7)
Bowel:										
Has colostomy, ileostomy, or difficulty controlling bowels	322,700	(30,553)	†34,700	(†10,875)	68.8	(7.7)	288,000	(27,729)	53.8	(2.6)
No colostomy, ileostomy, or difficulty controlling bowels	226,000	(19,326)	15,200	(3,546)	30.2	(7.6)	210,800	(18,284)	39.4	(2.3)

See footnotes at end of table.

Table 5. Demographics, health, and functional status of discharged patients who received care from a hospice provider that offered complementary and alternative therapies, by use: United States, 2007—Con.

Characteristic	Discharged patients who received hospice care from a provider that offered CAT ¹		Patients who received at least one CAT from the provider during their hospice stay				Patients who did not receive CAT from the provider during their hospice stay			
	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error	Number	Standard error
Cognitive functioning ³										
No cognitive impairment	155,700	(15,135)	13,500	(3,307)	30.4	(5.6)	142,200	(14,151)	30.2	(2.1)
Occasional reminders or some assistance.	138,300	(13,204)	†14,900	(†5,573)	33.5	(6.6)	123,300	(12,217)	26.2	(1.8)
Great deal of assistance in routine situations or severe cognitive impairment	211,000	(19,868)	16,100	(3,856)	36.1	(4.3)	195,000	(19,504)	41.5	(2.3)
Activities of daily living (ADL) ³										
Needs help with:										
1 to 3 ADLs	196,400	(19,917)	16,600	(4,531)	37.4	(4.4)	179,700	(19,272)	38.2	(2.8)
4 to 5 ADLs	306,700	(26,104)	27,800	(6,850)	62.4	(4.4)	278,900	(24,602)	59.3	(2.9)

. Category not applicable.

† Estimate does not meet standards of reliability or precision because the sample size is between 30 and 59, or sample size is greater than 59 but has a relative standard error of 30% or more.

(†) Standard errors accompanied by a dagger indicate the sample size is between 30 and 59, or the ratio of the standard error to the reported estimate is 30 percent or more.

* Estimate does not meet standards of reliability or precision because the sample size is less than 30.

(*) The standard error is not reported when the sample size for the estimate is less than 30, which does not meet the standards of reliability or precision.

¹CAT is complementary and alternative therapies. Providers were categorized as offering CAT if they offered CAT or had CAT providers on staff or contract. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

²All other races.

³Hospice patients who were comatose or in a vegetative state at time of admission to the agency were not assessed for cognitive and ADL functioning and were excluded from these estimates.

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on unrounded numbers.

DATA SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.

Technical Notes

Sample design

The sampling design for NHHCS was a stratified, two-stage probability design. The first stage consisted of the selection of a stratified sample of agencies. The primary sampling strata of agencies were defined by agency type and metropolitan statistical area (MSA) status. The second stage of sample selection was the selection of up to 10 current home health patients per home health agency, up to 10 hospice discharges per hospice agency, and a combination of up to 10 current home health patients and hospice discharges in agencies providing both home health and hospice care. This stage of sample selection was done using a computer algorithm to obtain systematic probability samples of current home health patients and hospice discharges. This study used data only from hospice discharges and hospice care providers.

Data collection

Data for NHHCS were collected through personal interviews with agency directors and staff who used administrative records to answer questions about the agencies, staffs, services, and programs, and medical records to answer questions about current home health patients and hospice discharges. The agency component of NHHCS was completed for 1,036 agencies. The patient component of the NHHCS was completed for 4,733 hospice discharges. The unweighted response rate across the two sampling stages (agency and hospice discharge) was 67%. The response rate across the two sampling stages (agency and hospice discharge) weighted by the inverse of the probability of selection was 57%. For further information on the sampling design and data collection, see Dwyer et al. “Redesign and Operation of the National Home and Hospice Care Survey, 2007” (21).

Estimation

Using the complex multistage design of the NHHCS, NCHS computed

a weight that took all sampling stages into account. This weight was used to inflate the sample numbers to national estimates, and included three other basic components: inflation by reciprocals of selection probabilities, adjustment for nonresponse, and population ratio adjustment. For further information on the NHHCS estimation, see Dwyer et al. “Redesign and Operation of the National Home and Hospice Care Survey, 2007” (21).

Standard errors and relative standard errors

The standard error (SE) is primarily a measure of the sampling variability that occurs by chance because only a sample is surveyed, rather than the entire universe. SEs were calculated using Taylor series approximations in SUDAAN.

NCHS bases publication of estimates for NHHCS on the relative standard error (RSE)—also known as the coefficient of variation—of the estimate and the number of sample records on which the estimate is based. The RSE is a measure of variability and is calculated by dividing the SE of an estimate by the estimate itself. The result is then converted into a percentage by multiplying it by 100.

- If the estimate is based on fewer than 30 sample cases, then the value of the estimate is not reported. This is indicated with an asterisk (*) in the tables and figures.
- If the estimate is based on a sample of 30–59 cases or on 60 or more cases and the RSE is 30% or more, then the estimate is reported but should not be assumed reliable. This is indicated with a dagger (†) preceding the estimate in tables and figures.
- If the estimate is based on 60 or more sample cases and the RSE is less than 30%, then the estimate is reported and is considered reliable.

Definition of terms

Terms related to hospice care providers

Hospice care—focuses on relieving pain and uncomfortable symptoms of

individuals with terminal illness and providing emotional and spiritual support to both the terminally ill and their family members.

Major referral source—Respondents were first shown a card and asked what the agency’s patient referral sources were. The card included the following options:

1. Hospital
2. Nursing home
3. Assisted living facility
4. Physician’s office
5. Outpatient medical or surgical center
6. Rehabilitation facility
7. Patient or family or friend
8. Other home health hospice agency
9. Insurance provider or payer source
10. Community organization
11. Other

Respondents were then asked which of the referral sources identified refers the greatest number of patients to the agency.

Services offered—The respondent was asked “Which of these services does this agency offer?” with additional instruction to include services offered as a result of contractual arrangements. Respondents were asked to identify all services from a list on show cards. Services were grouped and several show cards were used. The groupings and services included in each group are shown in [Table I](#).

All agencies missing information on whether the agency provided the service were coded as not providing the service. The number of services an agency provided (excluding complementary and alternative medicine) was summed to create a continuous variable from 0 to 27. For logistic regressions the number of services was dichotomized based on the mean number of services provided in the sample being analyzed. Thus, when the sample was all hospice care providers the mean number of services provided was 19, and the number of services was divided into providers that offered 19 or fewer services and more than 19 services. For the sample of hospice care only providers the mean was 21 and for agencies providing both home health and hospice care the mean

Table I. Services offered by hospice care providers

Service grouping	Services listed
Medical and skilled nursing	<ul style="list-style-type: none"> • Complementary and alternative medicine • Dietary and nutritional services • Enterostomal therapy • IV therapy • Physician services • Podiatry services • Skilled nursing or nursing services • Wound care
Equipment and medication	<ul style="list-style-type: none"> • Durable medical equipment • Pharmacy services • Occupational therapy • Physical therapy • Respiratory therapy • Speech therapy/audiology
Personal care	<ul style="list-style-type: none"> • Companion services • Continuous home care • Homemaker services • Meals on wheels services • Assistance with ADLs • Transportation services • Volunteer services
Psychosocial	<ul style="list-style-type: none"> • Pastoral services/spiritual counseling • Mental health services • Referral services • Respite care • (Medical) social services
Counseling	<ul style="list-style-type: none"> • Ethical issues counseling • Grief/bereavement counseling

was 16. When the sample was all hospice care providers that offered CAT, the mean number of services provided was 22, and the number of services was divided into providers that offered 22 or fewer services, and more than 22 services.

Complementary and alternative therapies (CAT)—For the purposes of this report, an agency that offered CAT was defined as one that responded either that they offered CAM as a service or said that they had CAM providers on staff or as contract personnel. All other agencies, including those missing information, were categorized as not offering CAT. The responses were based on the following questions:

1) As described above, respondents were asked to identify all services from a list on a show card. Complementary and alternative medicine (CAM) was one option.

If the respondent chose CAM he/she was then asked “Which of these complementary and alternative medicine therapies does this agency use?” Respondents were shown

another card and asked to identify all the therapies the agency uses.

Show card options included:

1. Acupuncture
 2. Aromatherapy
 3. Art therapy
 4. Guided imagery or relaxation
 5. Massage
 6. Music therapy
 7. Pet therapy
 8. Supportive group therapy
 9. Therapeutic touch
 10. TENS (Transcutaneous Electrical Nerve Stimulation)
 11. Other
- 2) The self-administered questionnaire included the following question: “Does this agency have any of the following types of staff or contract personnel who provide services to patients served by this agency?” One of the options was “Complementary Alternative Medicine (CAM) Providers.”

Terms related to hospice discharges

Age—Refers to discharge’s age at time of discharge. Calculated based on birth date and discharge date.

Hispanic or Latino origin—A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race. Based on question “Was he/she of Hispanic or Latino origin?”

Race—Consistent with the U.S. Office of Management and Budget’s 1997 Standards for the Classification of Federal Data on Race and Ethnicity. Respondents were shown a card and asked to select all that applied for the discharge.

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other

For the purposes of data analysis in this report, race was dichotomized to white and other, where other included all categories listed above other than white.

Marital status—Marital status at time of discharge. Based on question “Is/was (DISCHARGE) married, divorced, separated, never married, or living with a partner in a marriage-like relationship?” Additional information to be read if necessary was “at time of discharge.”

Length of hospice care—Calculated as the difference between the date of admission and date of discharge. Discharges may have been discharged dead or alive.

Comatose—Based on question “Was (DISCHARGE) comatose or in a vegetative state at the time he/she was admitted to this agency for hospice care?” Questions on ADL and cognitive functioning were not asked about comatose discharges.

Continence—Refers to when receiving hospice care. Respondents were asked whether either discharge had a catheter, a colostomy or ileostomy, and whether they had difficulty

controlling bladder during hospice care. If respondents noted the discharge had a urinary catheter, respondents were not asked whether the discharge had difficulty controlling bladder. If respondents noted the discharge had a colostomy or ileostomy, respondents were not asked whether the discharge had difficulty controlling bowels. For this analysis, discharges with either a catheter or difficulty controlling bladder were combined, as were discharges with a colostomy or ileostomy or difficulty controlling bowels.

Cognitive functioning—These questions were not asked of comatose discharges. Based on the following question “Please look at this card and tell me which category best describes (DISCHARGE)’s cognitive functioning or current mental status at the time he/she was admitted to this agency for hospice care.” Respondents were referred to the most recent Outcome and Assessment Information Set (OASIS) form, item MO560. Respondents were shown a card and asked which category best described the discharge’s cognitive functioning or current mental status on admission. Categories included:

1. No cognitive impairment
2. Required only occasional reminders in new situations
3. Required some assistance or direction in certain situations (is easily distracted)
4. Required a great deal of assistance or direction in routine situations
5. Severe cognitive impairment (constantly disoriented, comatose, delirium)

For the purposes of this report, categories 2 and 3 were combined and categories 4 and 5 were combined and termed “impaired cognitive functioning.”

Activities of daily living—These questions were not asked of comatose discharges. ADLs include bathing, dressing, toileting, eating, and transferring. Based on response to the following question: “At admission, did (DISCHARGE) need any help from another person with any of the following activities?” Respondents were asked to refer to the most recent OASIS

form (items MO650, 660, 670, 680, 690, and 710), or if not available, obtain most recent information in records.

Advance directives—Respondents were asked “Now please look at this card and tell me which of the following advance directives are listed in (DISCHARGE)’s medical records.” Respondents were then shown a card with the following options and asked to select all that apply:

1. Living will
2. Do not resuscitate
3. Do not hospitalize or do not send to emergency department
4. Feeding restrictions
5. Medication restrictions
6. Comfort measures only
7. Durable power of attorney
8. Health care proxy or surrogate
9. Organ donation
10. No advanced directives provided
11. Other

For the purposes of this analysis categories 3–6 were combined, and categories 7 and 8 were combined.

Pain management strategies—Based on the following question “According to (DISCHARGE)’s medical record, what strategies on this card were used to manage his/her pain” Respondents were shown a card and asked to select all strategies used. The card contained the following options:

1. Standing order for pain medication
2. PRN order for pain medication
3. Nonpharmacological methods (distraction, heat or cold, massage or positioning, and music therapy)
4. No strategies specified
5. Other

Receipt of CAT—Based on the question: “What services on this card did (DISCHARGE) receive from this agency while a hospice patient?” Additional information to be read if necessary was “Include services received from (AGENCY) as a result of contractual arrangements.” One of the options on the show card was “complementary and alternative medicine (CAM).” There was no information on the number of times the discharge received CAT, thus the discharge could have received CAT only

once or multiple times. Missing information was coded as not having received the service.

Level of care—Refers to the level of care received at time of discharge. Respondents were asked “Which level of hospice care on this card was (DISCHARGE) receiving at the time of his/her discharge?” They were then shown a card that included the following options:

1. Routine home care for patients receiving hospice services in their homes
2. Continuous home care provided 8 to 24 hours per day primarily by skilled hospice personnel
3. General inpatient care provided by skilled hospice staff
4. Inpatient respite care to relieve the primary caregiver

For the purposes of this analysis, categories 1 and 2 were combined, and categories 3 and 4 were combined.

Admission diagnosis—Based on the following question: “According to (DISCHARGE)’s medical records, what was the primary diagnosis or condition at the time he/she was admitted to this agency (that is, on or around (ADMISSION DATE))” Diagnoses were coded according to the *International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)*. For analysis, the ICD-9-CM codes were collapsed into categories as per [Table II](#).

Table II. ICD-9-CM codes and collapsed categories for analysis

Category	ICD-9-CM codes
Malignant neoplasms	140-208, 230-234
Diseases of the nervous system and sense organs.	320-389
Diseases of the circulatory system	390-459
Diseases of the respiratory system	460-519
Diseases of the digestive system	520-579
Diseases of the genitourinary system	580-629
Symptoms, signs, and ill-defined conditions	780-799

NOTE: ICD-9-CM is *International Classification of Diseases, Ninth Revision, Clinical Modification*.

Table III. Standard errors for characteristics of providers of hospice care by whether they offer complementary and alternative therapies: United States, 2007

Provider characteristic	Provide hospice care			Provide hospice care only			Provide both home health and hospice care		
	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹
Total	(250)	(3.9)	(4.0)	(210)	(5.5)	(5.3)	(145)	(3.2)	(4.5)
Ownership									
For profit	(172)	(†5.7)	(5.2)	(156)	(†7.2)	(†8.3)	(†72)	(*)	(†5.7)
Not for profit, including government	(208)	(5.7)	(5.2)	(167)	(7.2)	(8.3)	(130)	(4.2)	(5.7)
Location of agency									
Metropolitan statistical area ²	(243)	(3.2)	(4.0)	(208)	(3.1)	(†5.8)	(135)	(†6.0)	(5.6)
Micropolitan and other statistical area ^{3,4}	(60)	(3.2)	(4.0)	(31)	(3.1)	(5.8)	(54)	(6.0)	(5.6)
Affiliation									
Chain	(130)	(†5.9)	(3.5)	(114)	(†7.3)	(†4.7)	(†63)	(*)	(†5.1)
Independent	(232)	(5.9)	(3.5)	(193)	(7.3)	(4.7)	(133)	(4.8)	(5.1)
Total median number of patients served at time of survey	(8)	(10.2)	(13.7)	(7)	(6.1)	(8.0)	(25)	(36.7)	(19.8)
Median number of hospice patients at time of survey	(4)	(7)	(4)	(7)	(8)	(6)	(3)	(3)	(3)
Major referral source									
Hospital	(168)	(6.1)	(4.8)	(128)	(7.7)	(†5.5)	(110)	(†6.2)	(7.0)
Physicians office	(166)	(6.0)	(5.1)	(139)	(7.5)	(7.7)	(94)	(†6.4)	(6.7)
All other ⁵	(116)	(†3.9)	(4.3)	(108)	(*)	(†7.7)	(†41)	(*)	(*)
Type of hospice									
Freestanding	(187)	(5.4)	(5.2)	(178)	(6.6)	(7.9)	(61)	(*)	(†5.1)
Hospital, nursing home, or home health based	(167)	(5.4)	(5.1)	(99)	(†6.6)	(†4.6)	(136)	(5.2)	(5.1)
Operates dedicated hospice facilities or units									
Yes	(111)	(5.9)	(†1.7)	(110)	(7.4)	(†3.5)	(†15)	(*)	(*)
Mean number of beds	(0.8)	(1.1)	(1.1)	(0.9)	(1.2)	(1.3)	(1.0)	(1.3)	(1.5)
Median number of beds	(1.1)	(1.1)	(1.0)	(1.2)	(1.2)	(1.1)	(1.3)	(1.6)	(2.8)
No	(227)	(5.9)	(4.0)	(178)	(7.4)	(7.7)	(146)	(3.5)	(1.0)
Formal contracts with outside agencies or organizations									
Skilled nursing facility:									
Yes	(212)	(5.6)	(5.0)	(165)	(7.0)	(8.9)	(140)	(4.2)	(4.5)
No	(133)	(†5.6)	(4.0)	(†124)	(*)	(†6.9)	(47)	(*)	(4.5)
Hospital									
Yes	(185)	(6.3)	(5.3)	(169)	(7.8)	(7.8)	(85)	(5.3)	(6.4)
No	(170)	(6.3)	(4.9)	(†118)	(*)	(†3.6)	(123)	(†5.3)	(6.4)
Managed care or private insurance provider									
Yes	(185)	(6.3)	(5.2)	(143)	(7.7)	(8.2)	(120)	(5.9)	(6.8)
No	(178)	(6.3)	(5.1)	(157)	(7.7)	(7.5)	(89)	(†5.9)	(6.8)
Assisted living facility, board and care home, life care, or continuing care retirement community									
Yes	(201)	(6.1)	(5.4)	(166)	(7.6)	(8.2)	(115)	(†6.4)	(7.3)
No	(161)	(6.1)	(5.4)	(132)	(7.6)	(7.3)	(96)	(6.4)	(7.3)

See footnotes at end of table.

Table III. Standard errors for characteristics of providers of hospice care by whether they offer complementary and alternative therapies: United States, 2007—Con.

Provider characteristic	Provide hospice care			Provide hospice care only			Provide both home health and hospice care		
	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹	Total ¹	Offer CAT ¹	Do not offer CAT ¹
Number of years providing hospice care									
20 or fewer (1987 and later)	(209)	(5.5)	(5.4)	(189)	(6.9)	(7.9)	(95)	(5.2)	(7.4)
More than 20 (prior to 1987)	(149)	(5.5)	(4.8)	(96)	(6.9)	(5.3)	(114)	(†5.1)	(†7.6)

(†) Standard errors accompanied by a dagger indicate the sample size is between 30 and 59, or the ratio of the standard error to the reported estimate is 30 percent or more.

(*) The standard error is not reported when the sample size for the estimate is less than 30, which does not meet the standards of reliability or precision.

¹CAT is complementary and alternative therapies. Providers were categorized as offering CAT if they offered CAT or had CAT providers on staff or contract. All other providers, including those missing information on whether they offered CAT, are categorized as not offering CAT. 6.4% of providers were missing information on whether they offer CAT, although this estimate does not meet standards of reliability or precision because the sample size is less than 30.

²A metropolitan statistical area is a county or group of contiguous counties that contains at least one urbanized area of 50,000 or more population. May also contain other counties that are economically and socially integrated with the central county as measured by commuting.

³A micropolitan statistical area is a nonmetropolitan county or group of contiguous nonmetropolitan counties that contains an urban cluster of 10,000 to 49,999 persons. May include surrounding counties if there are strong economic ties between the counties based on commuting patterns.

⁴Other locations are nonmetropolitan counties that are not classified as part of a micropolitan statistical area.

⁵Includes nursing home; assisted living facility; outpatient medical or surgical center; rehabilitation facility; patient, family, or friends; other home health or hospice agency; insurance provider or payer source; community organization; and other.

NOTES: Numbers may not add to totals because of rounding or because totals and percent distributions include a category of unknowns not reported in the table. Percentages are based on unrounded numbers.

DATA SOURCE: CDC/NCHS, National Home and Hospice Care Survey, 2007.

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