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Hospices' Enrollment Policies May Contribute to Underuse of Hospice Care In the U.S.

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Abstract

Hospice use in the United States is growing, but little is known about barriers that terminally ill patients may face when trying to access hospice care. This article reports the results of the first national survey of the enrollment policies of 591 US hospices. The survey revealed that 78 percent of hospices had at least one enrollment policy that may restrict access to care for patients with potentially high-cost medical care needs, such as chemotherapy or total parenteral nutrition. Smaller hospices, for-profit hospices, and hospices in certain regions of the country consistently reported more limited enrollment policies. We observe that hospice providers' own enrollment decisions may be an important contributor to previously observed underuse of hospice by patients and families. Policy changes that should be considered include increasing the Medicare hospice per diem rate for patients with complex needs, which could enable more hospices to expand enrollment.

Hospice is a model of health care consistent with the country's stated health care reform goals: It is patient centered; it uses a multidisciplinary care team; it is coordinated across settings; it reduces unnecessary hospitalizations; and it saves health care dollars.(1–6)

Hospice care in the United States is growing. In 2010 there were more than 3,500 hospice providers--an increase of 53 percent from 2000--caring for 1.1 million Medicare beneficiaries at a cost of \$13 billion.(7) Ninety-eight percent of the US population lives close enough to a hospice to receive care.(8) Despite this growth, more than half of patients who are eligible and appropriate for hospice care die without receiving it.(9)

Several barriers may prevent terminally ill patients from receiving the benefits of hospice care. Many consider the primary barrier to be the eligibility criteria of Medicare's hospice benefit, which requires patients to forgo curative care in order to qualify for Medicare coverage. (1,10–14) Little is known, however, about the extent to which hospice providers have their own restrictive enrollment practices, over and above the Medicare hospice benefit eligibility criteria. Existing evidence on hospice enrollment practices is sparse, with only one state-level study of hospices in California.(12) That 2000 study found that 63 percent of hospices voluntarily restricted enrollment based on at least one criterion in addition to the Medicare hospice benefit eligibility criteria, and almost one-third had three or four restrictive enrollment policies.

There have been no national studies reporting hospice enrollment practices, although such data may be useful for understanding a potentially important reason for the underuse of hospice.

This article examines national trends in hospice enrollment practices. It reports the results of the first national survey of hospice providers regarding their enrollment practices. We examined the proportion of hospices that restrict enrollment based on criteria related to the

clinical, social, and financial needs of patients. We also determined how enrollment practices differ by hospice characteristics.

Findings from this study may be central to unraveling the puzzle of concurrent expansion of the hospice industry with persistent unmet need for hospice care.

Incentives Underlying Hospice Enrollment Practices

Disincentive to Enroll High-Cost Patients

The Medicare hospice benefit, which provides per diem reimbursement for hospice care, creates financial incentives to restrict enrollment of patients who are expected to require high-cost care. This incentive is especially important because the Medicare hospice benefit accounts for 84 percent of annual hospice revenue.(15).

Patients qualify for the Medicare hospice benefit if they are certified by two physicians as terminal--that is, they have a life expectancy of six months or less. Once patients are enrolled in the Medicare hospice benefit, all care related to their terminal illness must be paid for by their hospice. Given that the average hospice per diem reimbursement is \$140 per day, many treatments may be prohibitively expensive for hospices to provide.(16)

For example, many patients with terminal illnesses can benefit from using oral chemotherapy for palliative rather than curative purposes; radiation; or blood transfusions for treatment- or disease-related low blood cell counts. Any of these treatments can cost more than \$10,000 per month.(17)

Some patients may also require more labor-intensive care such as tube feeding--nutrition provided through a tube inserted into the stomach--for patients who can no longer swallow; total parenteral nutrition--intravenous nutrition when no significant nutrition can be obtained by the patient orally or by tube feeding--or an intrathecal catheter placed into the brain or spinal cord for the delivery of chemotherapy for tumors involving the brain or central nervous system.

For patients receiving hospice care at home, those who lack a caregiver in the home are likely to require more frequent and intensive home visits compared to those with someone at home to care for them. Lacking a caregiver at home, therefore, is likely to add to a patient's cost of care as well.

Because the Medicare per diem hospice reimbursement rate is not adjusted for the cost or intensity of care, hospices have financial incentives to not enroll potentially high-cost patients.

Encouraging The Use Of Hospice Through Open Access

In contrast to restrictive enrollment practices, hospice open-access policies may promote use of hospice. Specifically, with open-access enrollment policies, hospices enroll patients who are not yet eligible for hospice under the Medicare hospice benefit. Patients receive the medical comfort and social support traditionally available through hospice while simultaneously retaining access to medical treatments to slow or halt their disease progression.(18)

Although such patients may be covered by private insurance plans or may pay for their care out of pocket, initial reports(18) indicate that the cost of caring for patients enrolled through open-access policies is generally absorbed by the hospice provider. Hospices may have financial incentives to provide care through open-access policies if these patients transition

to hospice care earlier, which prolongs hospice length of stay and is therefore more profitable for the hospice provider.

Study Data And Methods

Design And Sample

We conducted a national cross-sectional study of a simple random sample of 775 hospices operating in the United States from September 2008 to November 2009. We chose our random sample from the 2006 Medicare Provider of Services file ($N = 3,036$ active hospices), which includes all hospices that participate in the Medicare program (approximately 93 percent of all hospices nationally).⁽¹⁵⁾

In addition, when the 2008 Medicare Provider of Services file ($N = 3,306$ active hospices) became available, we augmented our sample with hospices that were newly operating between 2006 and 2008. We estimated that 18 percent of hospices had been operating for two years or less. We then randomly selected 139 hospices (18 percent of our random sample of 775) from the 2008 Medicare Provider of Services file, to establish a total sample of 914 hospices.

We sent an introductory e-mail letter to each hospice medical director requesting his or her participation and a follow-up e-mail with a link to the web-based survey. Hospice medical directors were instructed to have the survey completed by the individual(s) at their hospice most knowledgeable about the survey questions.

Outcome Variables

To assess enrollment policies, hospice providers were asked whether or not they enrolled patients “who are receiving total parenteral nutrition,” “who are receiving tube feeding,” “who are receiving chemotherapy,” “who are receiving transfusions,” “who might need an intrathecal catheter,” “who wish to continue to receive palliative radiation,” and “without family caregivers.” These items were chosen because they are consistent with the smaller study of enrollment policies of California hospices,⁽¹²⁾ they are relatively common in patients who might benefit from palliative care, and many have dual roles as curative and palliative treatments.

We identified a hospice as having an open-access policy if it responded “yes” to the question, “Does your hospice offer palliative care services to non-hospice patients (i.e., open access)?”

Independent Variables

The survey included questions regarding descriptive characteristics of hospices: size (number of patients per day in the past twelve months), ownership (nonprofit, for-profit, government), years providing hospice care, whether the hospice was part of a chain of hospices, whether the hospice was vertically integrated (that is, affiliated with a hospital, nursing home, home health agency, or other health care organization), percentage of the hospice's patients residing in a nursing home, and census region.

Statistical Analyses

We calculated the proportion of hospices that reported having each of seven restrictive hospice enrollment policies. For each hospice, we calculated the total number (out of seven) of these enrollment policies. We also calculated the proportion of hospices that reported having an open-access enrollment policy.

We estimated adjusted risk ratios using modified Poisson regression models with a robust error variance⁽¹⁹⁾ for two outcomes: having no restrictive hospice enrollment policies, and having an open-access enrollment policy. Regression models controlled for the number of years a hospice had provided care, whether the hospice was part of a chain of hospices, whether the hospice was vertically integrated, percentage of patients in a nursing home, and census region. We used analysis of variance to compare across regions the percentage of hospices with each restrictive enrollment policy and the percentage with an open-access enrollment policy.

We performed all analyses using the statistical software SAS, version 9.1.

Limitations

This study is the first to report the enrollment policies in a national sample of US hospices. However, a number of limitations exist. First, data are self-reported by hospices, and we were not able to validate the existence of enrollment policies. Studies linking reported enrollment policies with national patient-level data are needed.

Second, although we had a high overall survey response rate (84 percent), and our survey response rate did not differ significantly by years providing hospice care or region, our survey response rate differed by hospice ownership (as discussed below in the Study Results). We could not test for differences in survey response rate by hospice size; however, the distribution of our sample by hospice size is similar to the distribution nationally.⁽¹⁵⁾

Third, our results reflect only the enrollment policies included in our survey: the seven restrictive enrollment policies and open access. Results may differ for other hospice enrollment policies not examined. However, our set of policies was quite comprehensive and based on prior work.⁽¹²⁾

Finally, our national survey was fielded in 2008–09. Although hospice enrollment policies may have changed in the years since then, there have been no major policy changes that might be expected to modify the enrollment policies described in this study.

Study Results

Study Population

Of the total 914 hospices randomly selected for the survey, 208 were excluded because they were no longer providing hospice care or had closed their facility at the time of the survey, resulting in 706 hospices eligible to respond. Of these 706 hospices, 591 completed our survey, for a response rate of 84 percent.

Survey response rates differed by hospice ownership. Nonprofit hospices had an 89 percent response rate; government-owned hospices, an 86 percent response rate; and for-profit hospices, a 79 percent response rate ($p = 0.004$ for chi-square comparison). Characteristics of our sample of 591 hospices are shown in Exhibit 1.

Hospice Enrollment Policies

Restrictive Enrollment Policies—The majority of hospices (78 percent) reported at least one restrictive enrollment policy, and fewer than 1 percent reported all seven restrictive enrollment policies (Exhibit 2). On average, hospices reported 2.3 (standard deviation 1.84) of the restrictive enrollment policies in the survey. The prevalence of restrictive policies ranged from 61 percent (standard error 0.02) of hospices that will not enroll patients who are receiving chemotherapy to 8 percent (standard error 0.01) of hospices that will not enroll patients who are receiving tube feeding.

Open-Access Policies—Twenty-nine percent of hospices (standard error 0.02) reported having an open-access enrollment policy (Exhibit 2). Almost one-third (30 percent) of hospices with open-access policies had none of the restrictions on enrollment. The average number of restrictive enrollment policies for hospices with open-access policies was significantly lower than for hospices without open-access policies (1.89 versus 2.48, $p < 0.001$; data not shown).

Hospices with open-access policies were significantly less likely than those without open-access policies to restrict access to patients who are receiving total parenteral nutrition (42 percent versus 59 percent, $p < 0.001$), who are receiving transfusions (28 percent versus 43 percent, $p < 0.001$), who might need an intrathecal catheter (24 percent versus 34 percent, $p = 0.018$), and who wish to continue to receive palliative radiation (23 percent versus 32 percent, $p = 0.036$; data not shown).

Hospice Size And Enrollment Policies—In multivariable analyses, larger hospices were significantly more likely than smaller hospices to have no restrictive enrollment policies (Exhibit 3). (Also, see online Appendix Exhibit 1 and regression results.)⁽²⁰⁾ The average daily census of hospices with no restrictive enrollment policies was 202 patients, compared with an average of 62 patients for hospices with at least one restrictive policy ($p < 0.001$). Size had the strongest effect on the likelihood that a hospice would enroll patients who wished to continue to receive palliative radiation and the likelihood that a hospice would enroll patients without a family caregiver (data not shown).

Larger hospices (those caring for 100 or more patients per day) were one and a half times more likely to have open-access policies compared with hospices having fewer than 20 patients per day (Exhibit 3, Appendix Exhibit 1, and regression results).⁽²⁰⁾ The average daily census of a hospice with an open-access policy was 151 patients, compared with 70 patients for hospices without an open-access policy ($p < 0.001$; data not shown).

Hospice Ownership And Enrollment Policies—Significant ownership differences existed in the likelihood of a hospice's having an open-access enrollment policy (Exhibit 3, Appendix Exhibit 1, and regression results).⁽²⁰⁾ Thirty-nine percent of nonprofit hospices compared with only 19 percent of for-profit hospices reported having an open-access enrollment policy. In fully adjusted models, nonprofit hospices were almost twice as likely as for-profit hospices to report having an open access enrollment policy (Exhibit 3).

Regional Variation In Hospice Enrollment Policies—We found substantial regional variation in hospice enrollment policies (Exhibit 3, Appendix Exhibits 1 and 2, and regression results).⁽²⁰⁾ Hospices in the Mountain and Pacific regions tended to have the most restrictive enrollment policies, and hospices in the South Atlantic had the least restrictive enrollment policies. The percentage of hospices with an open-access policy varied significantly by region (Exhibit 3).

Discussion

Patients with serious illnesses may desire complex palliative treatments, but few hospices will enroll patients with these complex needs. Only one-third of hospices will enroll patients who are receiving chemotherapy; only one-half will enroll patients receiving total parenteral nutrition, and only two-thirds will enroll patients who wish to continue to receive palliative radiation. Given that these are highly used services for patients who are seriously ill, our findings suggest that hospice providers' own enrollment decisions may be an important contributor to previously observed underuse of hospice by patients and families.

Hospices might not enroll patients wishing to receive complex palliative treatments for two primary reasons. First, treatments such as chemotherapy and radiation are often used for curative treatment, and the Medicare hospice benefit requires that patients forgo reimbursement for curative treatments once hospice care is initiated. Therefore, hospices may consider patients with these needs to be ineligible for hospice and to have goals of care inconsistent with the philosophy of hospice care.

This artificial dichotomy between curative and palliative treatment, however, does not reflect the reality faced by many patients with end-stage diseases, who pursue such treatments with the goal of palliation and desire hospice services in conjunction with these treatments.

Cost may be a second reason that hospices may have enrollment policies prohibiting patients who require complex palliative treatments. Such treatments are costly. Chemotherapy and radiation may cost a hospice up to three times the amount of the Medicare hospice per diem reimbursement.⁽¹⁷⁾ Some hospices may simply be unable to afford to enroll such patients.⁽¹⁶⁾ Although our study cannot identify the rationale(s) behind restrictive hospice enrollment policies, the high prevalence of such policies that it documents suggests the existence of a potentially important barrier to hospice use that has not been addressed at the national level.

Larger hospices consistently and independently reported less restrictive enrollment policies compared to other hospices. One explanation is that larger patient volume enables hospices to spread the financial risk of high-cost patients across a larger patient base. Cost averaging may enable larger hospices to enroll patients who require more costly services without greatly increasing their overall average cost per patient day.

Evidence of the advantages of larger hospices has been discussed in the context of higher quality of care, a wider range of services, more comprehensive bereavement programs, and greater access to care.^(12,21–24) Expanding enrollment at smaller hospices may require them to partner with outpatient palliative care programs to provide care along a broader continuum and share the financial risk of patients with high-cost needs.

The emergence of hospices with open-access policies signals the ability and willingness of some hospices to provide care outside the Medicare hospice benefit. However, only slightly more than one-quarter of hospices have such policies, and among them, two-thirds still have other restrictions on enrollment.

Hospices with open-access policies may be more successful than others at enrolling patients in the Medicare hospice benefit as soon as their disease progresses to the stage where they are eligible, thus potentially increasing hospice length-of-stay. Although a longer length of hospice stay has been shown to be financially beneficial for hospices,⁽⁷⁾ the costs of palliative care received by patients prior to Medicare hospice benefit eligibility must be absorbed by the hospice.

Nonprofit hospices were more than twice as likely as for-profit hospices to have open-access policies. This result is cause for concern because it suggests that the open-access policy innovation may be unlikely to spread, given the substantial growth in the for-profit hospice sector during the past decade.⁽²⁵⁾ Between 2000 and 2009, four out of five hospice providers that entered the US market were for-profit, and more than 40 percent of hospices operating in 2000 had changed ownership during that same decade.⁽²⁵⁾

It may take changes in hospice eligibility or reimbursement to render open-access policies more economically beneficial for hospices and thus to encourage them to be more widely

adopted. In the absence of such changes, it is unclear how patients who rely on open-access programs will access hospice services as the market share of nonprofit hospices continues to erode.

Policy Implications

Adjusting The Hospice Per Diem Rate

Our results indicate that patients who are receiving potentially high-cost palliative treatments might not have access to hospice services. They underscore the need to consider changes in how Medicare reimburses for the care that hospices provide.

Increasingly, the debate regarding improving access to hospice services in the United States has focused on changing the Medicare hospice benefit eligibility criteria. However, our results indicate that addressing financial risk to participating hospices may be as important as addressing patient eligibility.

Specifically, if the hospice per diem reimbursement were increased for patients with high-cost needs such as total parenteral nutrition, transfusions, or even chemotherapy, such patients would not be as financially risky for hospices to enroll, and enrollment policies might become less restrictive. A key area for future research is quantifying the increase in the per diem rate required to cover patients with high-cost needs.

Recently, a number of policy recommendations support Medicare increasing its per diem rate for the first and last days of every patient's enrollment with hospice.(7,16,26,27) The rationale behind these proposals is the hypothesis that because hospice costs follow a U-shaped cost curve, hospices should be compensated for the higher cost of a patient's first and last days of care.

Under existing hospice reimbursement, the high-cost first and last days of care of a patient's hospice stay can be averaged with the potentially lower-cost days in the middle of the stay, creating an incentive for longer hospice length-of-stay.

A concern regarding the proposed adjustment to the per diem rate, however, is that it may create an incentive for shorter hospice lengths-of-stay, which might not be in patients' best interest. Furthermore, the proposed adjustment does not address the issue of high-cost patients who may have more intensive needs throughout their stay, not merely on their first and last days of hospice care.

Compensating hospices for patients with high-cost needs would address the financial risk of caring for such patients, while preserving current incentives for earlier referral to hospice care.

Concurrent Curative And Palliative Care

Our results also suggest that there may be wide variation in the interpretation of the Medicare hospice benefit eligibility criteria related to the provision of care that may serve both curative and palliative purposes. Specifically, Medicare states that to elect the Medicare hospice benefit, an individual "waives all rights to Medicare payments . . . related to the treatment of the terminal condition for which hospice care was elected."(28)

This criterion may create a difficult dichotomy between pursuing potentially life-prolonging treatments and pursuing palliative treatments. What's more, what constitutes care in either category may be interpreted differently by hospices and referring physicians. For example, some hospices only admit patients who have stopped all life-sustaining treatment, including

chemotherapy and radiation. Other hospices allow some life-sustaining treatments as long as, even with the treatment, the patient is considered terminal. (17,29)

Furthermore, an increasing number of treatments, such as [please provide example,] are considered both life-prolonging and palliative. As a result, the very nature of what is considered “appropriate” hospice care is changing. Thus, the extent to which these types of treatments may be continued once hospice is elected is unclear.

How to provide hospice services in a cost-effective manner for people whose treatment plans include concurrent life-extending and palliative care is the subject of a pilot project funded by section 3131 of the Affordable Care Act, although results from this pilot are years from completion. In the meantime, relaxing the eligibility criteria for the Medicare hospice benefit to allow for concurrent life-extending and palliative care may be a desirable policy shift. There is at present a well-documented concern(16) regarding the financial risk that hospices face from Medicare audits. Hospices found to have enrolled patients who were not eligible for the Medicare hospice benefit, perhaps because they received concurrent care, must repay Medicare for reimbursement related to those patients.

Enrolling patients who require services that may be considered life prolonging is thus risky for small hospices, which may be less likely than larger hospices to be able to afford to return Medicare reimbursement. Thus, relaxing hospice eligibility criteria might enable smaller hospices to begin to eliminate enrollment restrictions and emulate the more open enrollment policies of larger hospices.

Implications For Hospice Referral

Our identification of wide variation in hospice enrollment policies may have implications for the timing of hospice referral. To the extent that physicians are aware of the enrollment policies of their local hospice(s), they may delay referral to hospice for patients with clinical, social, or financial needs that they believe would prohibit hospice enrollment.

It is important for referring physicians to be aware that there is extensive variation in hospice enrollment policies and that patients with more complex palliative care needs may be more likely to be admitted to larger or nonprofit hospices. An area for future study would be to determine whether hospices with less restrictive enrollment policies, including those with open-access enrollment policies, have better patient outcomes and higher rates of hospice use in their markets compared to hospices without such policies.

Conclusion

Our study found a high prevalence of hospices with enrollment policies that are likely to create barriers to greater use of hospice services. Smaller hospices, which represent one-quarter of all hospices currently in operation, and for-profit hospices, which represent more than half of all hospices, have the most restrictive enrollment policies. These findings are particularly concerning because in many areas of the country there is only one hospice serving each community.(8)

From a policy perspective, increasing the hospice per diem rate for patients who require complex palliative treatments and removing the Medicare hospice benefit limitation on concurrent care may enable more hospices to expand their enrollment and open their doors to patients who need and want hospice care. Until we have consensus, however, regarding how best to increase use of hospice services in a cost-effective manner, large hospices and nonprofit hospices may continue to lead the field in broadening access to hospice services.

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Biography

In this month's *Health Affairs*, Melissa Aldridge Carlson and coauthors report the results of the first national survey of the enrollment policies of 591 US hospices. The survey revealed that 78 percent of hospices had at least one restrictive enrollment policy for patients with potentially high-cost medical care needs. The authors observe these hospices' enrollment policies may contribute to underuse of hospice, and suggest policy changes such as increasing the Medicare hospice per diem rate for patients with complex needs.

Melissa Aldridge Carlson is an assistant professor of geriatrics and palliative medicine at the Mount Sinai School of Medicine. Her body of work examines the impact of hospice ownership, size, and other organization-level factors on the delivery of hospice care and access to hospice services. Her ongoing projects focus on identifying gaps in the availability in hospice care and highlighting strategies and processes of care employed by high-performing hospices.

Aldridge Carlson received an MBA from New York University and a doctorate, with an emphasis on health economics, health policy, and statistical methods in health services research, from Yale University.

Colleen Barry is an associate professor and associate chair for research and practice in the Department of Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health. Her research focuses on policy and regulation affecting often-stigmatized health conditions with a focus on mental illness, substance abuse disorders, and obesity as well as on the financing and organization of hospice care. Barry holds a master's degree in public policy and a doctorate in health policy from Harvard University.

Emily Cherlin is a research associate at the Yale University School of Public Health. She has worked on studies related to understanding clinicians' knowledge and attitudes concerning care for seriously ill patients and their families, barriers to timely enrollment in hospice care, and how delays in hospice enrollment impact the caregiver following the loss of the patient. She is particularly interested in the role of social work in delivering quality end-of-life care. Cherlin received both a master's degree and a doctorate in social work from the University of Connecticut.

Ruth McCorkle is the Florence S. Wald Professor of Nursing at the Yale School of Nursing, a professor in the Department of Epidemiology and Public Health at the Yale School of Medicine, and the director of psychosocial oncology at Yale Comprehensive Cancer Center. She is also founder and former director of the Center for Excellence in Chronic Illness Care at the university's School of Nursing. An international leader in cancer nursing, McCorkle received the Holland Distinguished Leadership Award from the American Psychosocial Oncology Society. She earned both a master's degree in medical-surgical nursing and a doctorate in mass communications from the University of Iowa.

Elizabeth Bradley is a professor of public health at Yale University, director of the Yale Global Health Initiative, and faculty director of the Yale Global Health Leadership Institute. She researches organizational change and quality of care within hospitals, nursing homes, and hospices. In addition to her work in US health systems, Bradley has ongoing projects to

strengthen health systems in China, Ethiopia, Liberia, South Africa, and the United Kingdom. Bradley has an MBA from the University of Chicago and a doctorate in health economics and health policy from Yale University.

Notes

1. Meier DE. Increased access to palliative care and hospice services: opportunities to improve value in health care. *Milbank Q*. 2011; 89(3):343–80. [PubMed: 21933272]
2. Taylor DH Jr, Ostermann J, Van Houtven CH, Tulskey JA, Steinhauer K. What length of hospice use maximizes reduction in medical expenditures near death in the US Medicare program? *Soc Sci Med*. 2007; 65(7):1466–78. [PubMed: 17600605]
3. Carlson MD, Herrin J, Du Q, Epstein AJ, Barry CL, Morrison RS, et al. Impact of hospice disenrollment on health care use and medicare expenditures for patients with cancer. *J Clin Oncol*. 2010; 28(28):4371–5. [PubMed: 20805463]
4. Wennberg JE, Fisher ES, Stukel TA, Skinner JS, Sharp SM, Bronner KK. Use of hospitals, physician visits, and hospice care during last six months of life among cohorts loyal to highly respected hospitals in the United States. *BMJ*. 2004; 328(7440):607. [PubMed: 15016692]
5. Pyenson B, Connor S, Fitch K, Kinzbrunner B. Medicare cost in matched hospice and non-hospice cohorts. *J Pain Symptom Manage*. 2004; 28(3):200–10. [PubMed: 15336332]
6. Teno JM, Clarridge BR, Casey V, Welch LC, Wetle T, Shield R, et al. Family perspectives on end-of-life care at the last place of care. *JAMA*. 2004; 291(1):88–93. [PubMed: 14709580]
7. Medicare Payment Advisory Commission. Reforming Medicare's hospice benefit. Chap. 6 in: Report to the Congress: Medicare payment policy. MedPAC; Washington (DC): 2009. Available from: http://medpac.gov/chapters/Mar12_Ch11.pdf
8. Carlson MD, Bradley EH, Du Q, Morrison RS. Geographic access to hospice in the United States. *J Palliat Med*. 2010; 13(11):1331–8. [PubMed: 20979524]
9. Bradley EH, Fried TR, Kasl SV, Cicchetti DV, Johnson-Hurzeler R, Horwitz SM. Referral of terminally ill patients for hospice: frequency and correlates. *J Palliat Care*. 2000; 16(4):20–6. [PubMed: 11965930]
10. Jennings B, Ryndes T, D'Onofrio C, Baily MA. Access to hospice care: expanding boundaries, overcoming barriers. *Hastings Cent Rep*. 2003; (Suppl):S3–7. S9–13, S5–21. passim. [PubMed: 12762184]
11. Lynn J, Forlini JH. “Serious and complex illness” in quality improvement and policy reform for end-of-life care. *J Gen Intern Med*. 2001; 16(5):315–9. [PubMed: 11359550]
12. Lorenz KA, Asch SM, Rosenfeld KE, Liu H, Ettner SL. Hospice admission practices: where does hospice fit in the continuum of care? *J Am Geriatr Soc*. 2004; 52(5):725–30. [PubMed: 15086652]
13. Casarett D, Van Ness PH, O'Leary JR, Fried TR. Are patient preferences for life-sustaining treatment really a barrier to hospice enrollment for older adults with serious illness? *J Am Geriatr Soc*. 2006; 54(3):472–8. [PubMed: 16551315]
14. Friedman BT, Harwood MK, Shields M. Barriers and enablers to hospice referrals: an expert overview. *J Palliat Med*. 2002; 5(1):73–84. [PubMed: 11839229]
15. National Hospice and Palliative Care Organization. NHPCO facts and figures: hospice care in America [Internet]. NHPCO; Alexandria (VA): 2010. Available from: http://www.nhpc.org/files/public/Statistics_Research/Hospice_Facts_Figures_Oct-2010.pdf [2012 Nov 6]
16. Huskamp HA, Buntin MB, Wang V, Newhouse JP. Providing care at the end of life: do Medicare rules impede good care? *Health Aff (Millwood)*. 2001; 20(3):204–11. [PubMed: 11585168]
17. Wright AA, Katz IT. Letting go of the rope--aggressive treatment, hospice care, and open access. *N Engl J Med*. 2007; 357(4):324–7. [PubMed: 17652646]
18. Abelson R. A chance to pick hospice. *New York Times*. Feb 10, 2007
19. Zou G. A modified Poisson regression approach to prospective studies with binary data. *Am J Epidemiol*. 2004; 159(7):702–6. [PubMed: 15033648]
20. To access the Appendix, click on the Appendix link in the box to the right of the article online.

21. Carlson MD, Barry C, Schlesinger M, McCorkle R, Morrison RS, Cherlin E, et al. Quality of palliative care at US hospices: results of a national survey. *Med Care*. 2011; 49(9):803–9. [PubMed: 21685811]
22. Carlson MD, Herrin J, Du Q, Epstein AJ, Cherlin E, Morrison RS, et al. Hospice characteristics and the disenrollment of patients with cancer. *Health Serv Res*. 2009; 44(6):2004–21. [PubMed: 19656230]
23. Foliart DE, Clausen M, Siljestrom C. Bereavement practices among California hospices: results of a statewide survey. *Death Stud*. 2001; 25(5):461–7. [PubMed: 11806414]
24. Barry C, Barry CL, Carlson MDA, Thompson J, Schlesinger M, McCorkle R, et al. Caring for grieving family members: results from a national hospice survey. *Medical Care*. Forthcoming. 2012
25. Thompson JW, Carlson MD, Bradley EH. US hospice industry experienced considerable turbulence from changes in ownership, growth, and shift to for-profit status. *Health Aff (Millwood)*. 2012; 31(6):1286–93. [PubMed: 22665841]
26. Nicosia N, Reardon E, Lorenz K, Lynn J, Buntin MB. The Medicare hospice payment system: a consideration of potential refinements. *Health Care Financ Rev*. 2009; 30(4):47–59. [PubMed: 19719032]
27. Fitch, K.; Pyenson, B. *First and last days of hospice cost more: an actuarial evaluation of hospice benefits provided to Medicare beneficiaries*. Milliman; New York: 2003.
28. Centers for Medicaid and Medicare Services. Medicare and Medicaid programs: hospice conditions of participation; final rule. *Fed Regist*. 2008; 73(109):32088–220.
29. Furman CD, Doukas DJ, Reichel W. Unlocking the closed door: arguments for open access hospice. *Am J Hosp Palliat Care*. 2010; 27(1):86–90. [PubMed: 20124254]

Exhibit 1

Characteristics Of Sampled Hospices, 2008-09

Characteristic	Number	Percent
Ownership		
Nonprofit	283	48
For-profit	285	48
Government/other	23	4
Hospice is a member of a chain	85	14
Hospice is vertically integrated	143	24
Census region		
New England/Mid-Atlantic	68	12
East/West North Central	161	28
South Atlantic	96	16
East/West South Central	163	27
Mountain and Pacific	103	17

	Median	SD
Daily census (patients per day)	46.5	179.9
Years providing hospice care	12.0	9.9
Percent of patients in nursing home	21.4	21.0

SOURCE National Hospice Survey, 2008-09. NOTES $N = 591$. SD is standard deviation.

Exhibit 2**Hospice Enrollment Policies Potentially Restricting Access To Hospice Care, 2008-09**

Policy	Percent of hospices (N = 591)
Restrictive enrollment policies	
Patient cannot be receiving chemotherapy	61
Patient cannot be receiving total parenteral nutrition	55
Patient cannot be receiving transfusions	40
Patient cannot need an intrathecal catheter	32
Patient cannot continue to receive palliative radiation	30
Patient must have a caregiver at home	12
Patient cannot be receiving tube feeding	8
Hospice has all restrictive enrollment policies	0.8
Hospice has no restrictive enrollment policies	22
Hospice has an open-access policy	29

SOURCE National Hospice Survey, 2008-09.

Exhibit 3

Association Between Hospice Characteristics And Enrollment Policies, 2008-09

Characteristic	Hospice has no restrictive enrollment policies (n = 132) ^a		Hospice has open- access enrollment policy (n = 172)	
	Percent	Adjusted risk ratio	Percent	Adjusted risk ratio
Daily census				
<20	7	1.00	27	1.00
20–49	13	2.02	27	1.07
50–99	26	4.42 ^{***}	28	1.29
100 or more	48	7.66 ^{***}	40	1.54 ^{**}
Ownership				
For-profit	22	1.00	19	1.00
Nonprofit	24	0.95	39	1.72 ^{***}
Government/other	10	1.20	30	1.66
Years providing hospice care				
0–4	15	1.00	21	1.00
5–9	19	0.85	22	1.01
10–14	30	1.42	20	0.84
15 or more	25	1.06	27	1.14
Chain member				
No	20	1.00	29	1.00
Yes	34	1.26	30	1.06
Hospice is vertically integrated				
No	20	1.00	27	1.00
Yes	29	0.98	36	1.18
Nursing home patients				
0–20 percent	21	1.00	32	1.00
>20 percent	24	1.02	27	1.00
Census region				
New England/Mid-Atlantic	28	1.00	50	1.00
East/West North Central	25	1.00	26	0.49 ^{***}
South Atlantic	33	0.96	26	0.49 ^{***}
East/West South Central	14	0.56 ^{**}	17	0.46 ^{***}
Mountain and Pacific	17	0.62	43	0.93

SOURCE National Hospice Survey, 2008-09.

^aHospice will enroll patients who are receiving chemotherapy, total parenteral nutrition, transfusions, tube feeding, an intrathecal catheter, or palliative radiation or who do not have a caregiver at home.

**
p < 0.05

 $p < 0.01$