Hospice Care for Patients with Dementia: Does Volume Make a Difference?

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Abstract
Using the repository of 2005 Family Evaluation of Hospice Care data, this study examined whether bereaved family members report higher quality of care when hospices care for greater vs. lesser proportions of dementia patients. This organization-level analysis included 396 hospices meeting the study’s eligibility criteria. Using hospice percentages of the “proportion of decedents with dementia,” categories representing the lower three, the fourth and highest quintile values were created (i.e., <13%, 13%–19%, and ≥19%). Analyses were stratified by for-profit vs. not-for-profit because preliminary analyses showed differential associations by profit status. In for-profit hospices, hospices with the highest vs. lowest proportion of dementia patients (≥19% vs. <13%) had significantly lower unmet pain needs (-1.7%, 95% confidence interval [CI] -3.1% to -0.2%). However, for both profit groups, caring for ≥19% dementia decedents (vs. <13%) was associated with a lower proportion of “excellent” care ratings (-2.3%, 95% CI -4.5% to -0.2%). Statistically significant associations between higher volume and better ratings were not observed for the remaining (six) outcomes, although this trend was found more among for-profit hospices. Thus, profit status appears to modify the association between volume of dementia care and care ratings. Further study is needed to understand the nonintuitive negative association between higher volume and lower satisfaction. This study emphasizes the need for examination of quality outcomes by profit status.

Key Words
Hospice, dementia, outcomes, survey, volume, profit status

Introduction
Fifty-eight percent of Medicare beneficiaries who received hospice care in 2002 and 2003 had noncancer diagnoses,1 representing an increase of over 140% from the 24% with hospice care in 1992.2 One of the major factors contributing to this increase has been the growth of...
hospice care in nursing homes, where a large proportion of patients with advanced dementia reside and die. Alzheimer’s disease is the fifth leading cause of death for persons 65 years of age and older, and as such, increased use of hospice is advocated. In conjunction with this, however, interest and concern has been expressed as to whether hospices that have historically cared for primarily dying cancer patients are equipped to meet the unique challenges and demands associated with caring for persons with advanced dementia.

Previous research has shown hospice care for dementia patients and families is associated with better pain control, fewer terminal hospitalizations and invasive treatments, and greater overall satisfaction with end-of-life care. Furthermore, a study we conducted has shown family evaluations of hospice care to be similar when decedents had dementia diagnoses vs. cancer or other noncancer diagnoses. Nevertheless, given the unique challenges accompanying care of patients with advanced dementia, of interest is whether evaluation of hospice care differs across hospice providers. Specifically of interest is whether family evaluation of hospice care is higher (i.e., evaluated better) when hospices care for greater proportions of dementia patients. In hospitals, research has supported the notion that “practice makes perfect” — that with a greater volume of a particular procedure or type of care (and with the specialization or experience accompanying greater volume) comes higher quality. This notion has also been supported by nursing home research that showed dementia residents have lower rates of hospitalization when nursing homes care for higher vs. lower proportions of dementia residents.

The main objective of this study was to quantify the association between family evaluations of care for hospice decedents with a primary diagnosis of dementia and the volume of dementia patients served by the hospice providers. We hypothesized that when hospices care for greater proportions of dementia patients, hospice care would be better evaluated by bereaved family members (i.e., higher satisfaction and fewer problems and unmet needs). Identification of an association between higher volume and higher quality is a first step toward identifying hospices with “best practices” that may be replicated in order to provide higher-quality dementia care across a broader range of providers.

Methods

Data Sources

Data describing hospice decedents, their family members, and the family’s satisfaction with or perception of hospice care were obtained from Family Evaluation of Hospice Care (FEHC) surveys collected between January 1, 2005 through December 31, 2005 by the National Hospice and Palliative Care Organization (NHPCO). The NHPCO is a non-profit organization that represents 80% of hospices nationwide (~3000). In 2003, NHPCO adopted the FEHC as their standard tool for benchmarking and quality improvement purposes. The FEHC questionnaire examines the quality of hospice care from the bereaved family’s perspective. The NHPCO has encouraged all hospices to implement the FEHC; however, participation is voluntary. FEHC data are collected either by an individual hospice or by a hired vendor. The latter method is preferred to encourage candid reporting. Family members are contacted 1—3 months after the patients’ death to solicit their participation. Surveys are conducted by mail and take approximately 20 minutes to complete. NHPCO maintains a web site for individual hospices to electronically submit their data to a common repository. Because this was a provider-level study, all patient, respondent, and FEHC rating data were summarized for each hospice. Hospice programs participating in this survey have been found to be similar to hospice programs nationwide, as have the hospice decedent characteristics represented by the FEHC survey responses.

Study Population

A total of 796 hospices were identified as having response rates of >20%. The mean annual response rate was calculated for each hospice by averaging the four quarterly response rates in 2005. Hospices whose mean annual survey response rate was <20% were excluded because investigators considered this value to be a reasonably low threshold of survey response to warrant exclusion (n = 23 hospices). In a previous related study by our group, we
examined the use of differing response rate cut-offs (i.e., 20%, 30%, 40%, 50%, and 60%) but because the main study findings did not differ based on these cut-points we stayed with the 20% cut-point. Among the remaining 773 hospices, 684 had at least one survey response for a decedent with dementia. In an attempt to avoid undue influence of individual ratings on a hospice’s average rating, hospices with five or fewer survey responses for dementia patients were also excluded (n = 287). An additional hospice was excluded because of missing ownership information, resulting in a final sample of 396 hospices available for these analyses (reporting on FEHC survey responses for 7,664 decedents with dementia [86% of the 8,911 dementia survey responses included in the larger study]).

Hospice Program Characteristics

The volume of dementia decedents served by the individual hospices was estimated by calculating the proportion of all decedents who had a primary diagnosis of dementia based on the FEHC survey responses, and this proportion was found to be comparable to national data. In the FEHC survey, respondents were asked to choose the primary illness leading to hospice referral from a list of diseases (i.e., close-ended question), and based on these responses, patients were categorized as having a dementia diagnosis (Alzheimer’s disease or other). The proportion of a hospice’s decedents with dementia ranged from 3% to 44% (median, 11.6%). Three categories representing increasing volumes of dementia care were created to approximate the lower three, the fourth and the top quintile values of the distribution (i.e., <13%, ≥13%<19%, and ≥19%). These categories were selected because we expected to observe the most difference in outcomes in hospices caring for the highest proportions of dementia patients. We stratified by a hospice’s proportion of dementia decedents, rather than the total number of dementia decedents, because the proportion considers the number relative to a hospice’s size, which we believe to be a more meaningful measure of potential exposure to (practice with) dementia patients.

Other decedent characteristics obtained from the FEHC included: age at death (by categories), gender, education (≥high school education), and race (white vs. other). For analytic purposes, decedent age was dichotomized at ≥85 years. The FEHC also asks respondents to identify their relationship to the decedent as one of the following: spouse, partner, child, parent, sibling, other relative, friend, or other. Based on the distribution of this variable, relationship to decedent was further categorized as spouse, child, or other. These categorical variables were summarized at the hospice level and proportions calculated.

Hospices entered descriptive program characteristics and their average daily census (ADC) each quarter when they first accessed the NHPCO web site to submit FEHC data. Hospices self-identified their profit status and are designated here as for-profit (n = 106) and not-for-profit (n = 290; includes one government-owned hospice). The type of hospice was categorized as freestanding, hospital-based, part of a home health agency or other (e.g., health care plan, Veteran’s Administration, prison). The ADC data reported in the second quarter of 2005 was arbitrarily chosen for these analyses and categorized as follows: <51, 51–100, and ≥100 hospice recipients. Also, based on sensitivity analyses, we dichotomized the ADC variable as <51 and ≥51 for regression analyses. If ADC data were missing in the second quarter, we used the values reported in the preceding quarter.

Outcomes of Interest

The FEHC survey is an abbreviated version of the original validated After-Death Family Interview. The instrument measures key palliative care outcomes based on a patient-focused, family centered conceptual model. The FEHC survey contains 61 close-ended questions (13 demographic and 48 evaluative). The evaluative questions are grouped into five domains, each of which can be administered separately and maintain psychometric integrity. These domains include: (1) overall satisfaction with care, (2) coordination of care, (3) attending to family needs for information, (4) attending to family needs for support, and (5) provision of physical comfort and emotional support to the patient. Details of the FEHC survey contents and scoring scheme are described elsewhere. In total, eight FEHC domains outcomes (described below) were studied.
Briefly, overall satisfaction with care was assessed in a single question asking respondents to rate overall hospice care as excellent, very good, good, fair, or poor. Overall satisfaction of care was dichotomized into excellent vs. very good, good, fair or poor; this dichotomous outcome has been used by NHPCO for comparative reporting.

We used problem scores to quantify four outcomes representing the three domains of care: coordination of care, attending to family needs for information (i.e., what to expect during the dying process and information provided about the treatment of symptoms), and attending to family needs for emotional support. Patient problem scores are the sum of negative responses for a set of domain questions, and thus, higher scores represent more opportunities to improve care. For example, the coordination of care domain consisted of three questions, with a possible range of scores from 0 to 3. These three questions were (1) How often did the family get confusing or contradictory information? (always, usually, sometimes, or never) (a response of “always” or “usually” gets 1 point); (2) Was one nurse identified as being in charge? (yes/no) (a response of “no” gets 1 point); and (3) Was there a problem with hospice doctors or nurses not knowing enough about the patient’s history? (yes/no) (a response of “no” gets 1 point). For these analyses, we created a dichotomous variable to represent 0 vs. ≥1 problems since the majority of respondents did not report any problems. Then, for each hospice we calculated the proportion of respondents reporting one or more problems.

For the domain of provision of physical comfort and emotional support to the patient, we examined whether the patient had unmet needs for three distressing symptoms: pain, dyspnea, and anxiety or sadness (i.e., “emotional” support). For each symptom, respondents were asked whether the treatment provided to the patient was less than what was wanted, just the right amount, or more than what was wanted. In these analyses, an unmet need was defined as receiving less or more treatment than was wanted (i.e., undesirable), as opposed to just the right amount of treatment (desirable). Then, for each hospice we calculated the proportion of respondents reporting unmet needs for pain, dyspnea, and emotional support.

Analysis

The hospice was the unit of analyses throughout the study. Because preliminary analyses showed differential associations by profit status, we stratified descriptive analyses by a hospice’s profit status. Then, we calculated descriptive statistics for hospices within each of the three “proportion with dementia” categories. For the patient and respondent level variables, overall means of the hospice-level proportions were calculated and then analysis of variance tests were used to detect statistically significant differences across volume categories. For hospice program categorical variables, Chi-squared tests were used to detect statistically significant differences across volume categories. The distribution of FEHC outcome variable values was examined to detect outliers, and for two outcomes (i.e., unmet emotional needs and unmet dyspnea needs), a total of three hospices with outlier values were excluded from both descriptive and analytic analyses (two hospices for unmet emotional and one for dyspnea outcome excluded).

Linear regression analyses were used to test the statistical significance of the observed associations between the FEHC domain outcomes and each of the two higher dementia volume categories (with the lowest category as the reference group). For each FEHC domain outcome, we tested whether there was a statistically significant interaction between each of the two higher volume categories and profit status. Interactions between profit status and the highest volume category (≥19%) were only statistically significant (at P < 0.05) for the outcome of unmet pain; therefore, to simplify interpretation, stratified regression models were run for this outcome. Because the impact of the proportion of dementia care may be different depending on hospice characteristics, we controlled for smaller vs. larger hospice size (<51 vs. ≥51 ADC), corporate status (yes/no), and ownership type (freestanding vs. all other ownership types) in regression models. We attempted to include hospice decedent and respondent characteristics such as percent of decedents over 85 and percent of “other” respondents in regression models but they were too correlated with
the proportion of dementia variables. The conduct of this study was approved by the Institutional Review Boards at Brown University and Hebrew SeniorLife.

**Results**

**Hospice Program and Decedent Characteristics**

Of the 396 hospices, 106 (27%) had for-profit ownership. As shown in Fig. 1, the percentage of hospices by volume categories varied by hospice profit status. Overall, while 60% of hospices were in the lowest volume category, 15% of the for-profit hospices and 77% of the not-for-profit hospices were in this category. Conversely, 59% of the for-profit hospices were included in the highest volume category compared to 6% of the not-for-profit hospices.

Decedents in hospices caring for greater vs. lesser proportions of dementia patients were more often over 85 years of age and female (Table 1). In for-profit hospices only, decedents in hospices with greater proportions of dementia decedents were less often high school graduates. Also, respondents were less frequently a spouse or child and more frequently categorized as “Other” in hospices caring for higher proportions of dementia decedents, with this trend being more consistent in for-profit vs. not-for-profit hospices. Race did not appear to differ across volume categories (Table 1).

Eighty-three percent of the for-profit hospices with ≥19% of dementia decedents had an ADC of 51–100 patients; on the other hand, in not-for-profit hospices, size was more variable across dementia categories (Table 1). As expected, corporate ownership was highly prevalent in for-profit hospices (81% overall), and among all hospices, was most common in hospices caring for the highest proportion of dementia decedents (Table 1).

**FEHC Domain Outcomes**

**Descriptive Analyses.** There was limited support for the notion that FEHC ratings of dementia hospice care are better (i.e., more excellent ratings and fewer problems and unmet needs) when hospices care for greater vs. lesser proportions of dementia decedents (Table 2); however, some differences in the direction hypothesized were present in for-profit hospices. In for-profit hospices, three of the eight FEHC domain ratings (i.e., coordination of care, information provided by health care provider [what to expect] and unmet pain) showed a trend toward better ratings when hospices provided a higher volume of dementia care; for unmet pain, these differences reached marginal statistical significance ($P = 0.056$). Additionally, for four of the five remaining domain outcomes, for-profit hospices providing the highest volume of dementia care had better ratings than those providing the lowest. In not-for-profit hospices, emotional support for family was the only domain with a (nonstatistically significant) trend of better ratings with higher volumes of dementia care. In contrast, when not-for-profit hospices provided a higher volume of dementia care, the overall satisfaction and dyspnea outcomes showed a trend toward poorer ratings (not statistically significant; Table 2). A particularly notable finding was that not-for-profit hospices caring for the highest volume of dementia decedents often had the poorest FEHC ratings (Table 2; $n = 18$ hospices).

Though not the primary objective of this study, we observed that the associations between FEHC ratings and volume of dementia care differed by profit status. Specifically, many of the FEHC ratings were better in not-for-profit vs. for-profit hospices, with the exception of emotional support for family and unmet patient needs for pain and dyspnea, which were similar across both groups, or better in for-profit hospices. As shown in Fig. 2, in
for-profit hospices there were fewer unmet pain needs among providers caring for higher volumes of dementia patients while the opposite was true in not-for-profit hospices. It is important to note that the proportion of hospices across volume categories varied by profit status (Fig. 1), and in part because of small sample sizes in some volume categories, standard deviations for several FEHC ratings are large (Table 2).

Multivariable Analyses. Two linear regression models revealed the presence of significant associations between FEHC ratings and the volume of dementia care provided by hospices (Table 3). For-profit hospices that cared for the highest proportion of dementia decedents had a 1.7% (95% CI −0.2%, −3.1%) lower proportion of decedents with reported unmet pain needs. Also, among smaller for-profit hospices (<51 ADC) there was a 2.9% (95% CI −4.8%, −1.1%) lower proportion of unmet pain needs.

An unanticipated finding was that overall satisfaction ratings of “excellent” were 2.3% (95% CI −4.5%, 0.2%) lower in hospices caring for the highest (vs. the lowest) proportion of dementia residents (controlling for profit and corporate status and for hospice type and size). However, other hospice program

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**Table 1**

Hospice Program Characteristics by Proportion of Decedents with Diagnosis of Dementia* and by For-Profit (n = 106) and Not-for-Profit (n = 290) Hospices

<table>
<thead>
<tr>
<th>Decedent Characteristics</th>
<th>For-Profit; (n = 106)</th>
<th>NFP; (n = 290)</th>
<th>For-Profit; (n = 26)</th>
<th>NFP; (n = 222)</th>
<th>For-Profit; (n = 27)</th>
<th>NFP; (n = 50)</th>
<th>For-Profit; (n = 63)</th>
<th>NFP; (n = 18)</th>
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<tbody>
<tr>
<td>Age over 85</td>
<td>49.8</td>
<td>39.8</td>
<td>44.5</td>
<td>38.5</td>
<td>45.8</td>
<td>42.4</td>
<td>52.8</td>
<td>47.2</td>
</tr>
<tr>
<td>Female</td>
<td>59.7</td>
<td>55.0</td>
<td>57.0</td>
<td>54.7</td>
<td>57.1</td>
<td>56.0</td>
<td>61.8</td>
<td>56.6</td>
</tr>
<tr>
<td>Education, ≥ High school</td>
<td>66.0</td>
<td>69.4</td>
<td>69.5</td>
<td>70.3</td>
<td>66.0</td>
<td>65.7</td>
<td>62.1</td>
<td>70.0</td>
</tr>
<tr>
<td>White</td>
<td>92.3</td>
<td>93.8</td>
<td>92.1</td>
<td>94.2</td>
<td>92.4</td>
<td>92.3</td>
<td>92.2</td>
<td>93.2</td>
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<td>Respondent relationship</td>
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<tr>
<td>Spouse</td>
<td>29.8</td>
<td>35.6</td>
<td>33.6</td>
<td>36.6</td>
<td>32.6</td>
<td>32.9</td>
<td>26.7</td>
<td>29.4</td>
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<tr>
<td>Child</td>
<td>36.8</td>
<td>48.2</td>
<td>41.9</td>
<td>47.7</td>
<td>38.9</td>
<td>49.7</td>
<td>40.0</td>
<td>50.2</td>
</tr>
<tr>
<td>Other</td>
<td>31.7</td>
<td>16.2</td>
<td>24.5</td>
<td>15.6</td>
<td>28.3</td>
<td>17.3</td>
<td>33.2</td>
<td>20.3</td>
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<td>Program characteristics</td>
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<tr>
<td>Average daily patient census</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;51</td>
<td>8.5</td>
<td>27.2</td>
<td>6.2</td>
<td>24.3</td>
<td>3.7</td>
<td>34.0</td>
<td>11.1</td>
<td>44.4</td>
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<tr>
<td>51–100</td>
<td>74.5</td>
<td>30.0</td>
<td>43.8</td>
<td>32.0</td>
<td>74.1</td>
<td>20.0</td>
<td>82.5</td>
<td>35.3</td>
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<tr>
<td>≥101</td>
<td>17.0</td>
<td>42.8</td>
<td>50.0</td>
<td>43.7</td>
<td>22.2</td>
<td>46.0</td>
<td>6.3</td>
<td>22.2</td>
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<td>Corporate owned</td>
<td>81.1</td>
<td>13.8</td>
<td>56.3</td>
<td>14.4</td>
<td>77.7</td>
<td>6.0</td>
<td>88.8</td>
<td>29.4</td>
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<td>Organizational type</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Freestanding</td>
<td>89.1</td>
<td>58.5</td>
<td>66.7</td>
<td>55.6</td>
<td>91.6</td>
<td>64.5</td>
<td>92.8</td>
<td>76.4</td>
</tr>
<tr>
<td>Hospital</td>
<td>4.4</td>
<td>27.0</td>
<td>8.3</td>
<td>28.8</td>
<td>8.3</td>
<td>25.0</td>
<td>1.8</td>
<td>11.7</td>
</tr>
<tr>
<td>Home Health Agency</td>
<td>4.3</td>
<td>11.1</td>
<td>25.0</td>
<td>12.2</td>
<td>0</td>
<td>6.25</td>
<td>1.8</td>
<td>11.7</td>
</tr>
<tr>
<td>Other</td>
<td>2.7</td>
<td>3.3</td>
<td>0</td>
<td>3.4</td>
<td>0</td>
<td>4.1</td>
<td>3.5</td>
<td>0</td>
</tr>
</tbody>
</table>

NPF = Not-for-profit.  
*Proportions based on FEHC surveys received.
characteristics had the biggest effect on satisfaction ratings of "excellent." Excellent ratings were 4.2% (95% CI 6.4%, -2.1%) lower in for-profit vs. not-for-profit hospices, and 4.4% (95% CI 6.2%, -2.6%) lower in corporate-owned hospices. Hospices with an ADC of less than 51 patients (vs. $\geq 51$ patients) had a 3.0% (95% CI 1.4%, 4.5%) higher proportion of excellent ratings.

**Discussion**

This study provided only limited support for the "practice makes perfect" hypothesis as applied to hospice care for dementia patients—that families would better evaluate hospices that had provided care to a greater volume of dementia decedents. Associations between higher volumes of dementia care and better FEHC ratings were observed primarily in for-profit hospices and these observations were statistically significant for only the FEHC domain outcome of unmet patient pain needs. In contrast, in not-for-profit hospices the poorest ratings were often observed in hospices that had cared for the highest proportion of dementia decedents. Study findings clearly show differential associations by profit status between volume of dementia care and FEHC ratings even though a statistically significant interaction between a higher volume category and profit status was only observed for unmet pain needs (in part because of small sample sizes for some volume categories).

The observed differences in the associations between dementia volume and FEHC ratings by hospice profit status are intriguing, and the extent to which they reflect practice differences are worthy of further study. Because for-profit hospices have been found to serve a higher percentage of nursing home residents, one possible explanation for these observations may be that they are influenced by differing proportions of care provided across...
sites of care (i.e., care in homes in the community vs. nursing homes or assisted living facilities) by for-profit and not-for-profit hospices. Although the FEHC survey data does not include information on site of care, this possibility is supported by our finding that for-profit hospice decedents appear to be more similar to nursing home residents compared to those in not-for-profit hospices (i.e., more frequently over age 85 and female). Thus, if it is true that for-profit hospices caring for a high volume of dementia patients are doing so primarily in nursing homes, then the better evaluation of pain and dyspnea management may reflect improved care owing to delivery of that care in the nursing home setting. This possibility is supported by prior work demonstrating that dementia patients dying in nursing homes experience less pain and dyspnea compared to those dying at home.19

Our finding that an overall rating of “excellent” was less likely among hospices that had cared for the highest proportion of dementia decedents (Table 3) was unexpected. A possible explanation for this finding may be that provision of higher proportions of dementia care is correlated with more nursing home care, and it may be that respondents are less likely to rate terminal care provided in nursing home settings as “excellent” despite the possibility of better pain and dyspnea management. This explanation is compatible with previous research that found “excellent” ratings across four sites of end-of-life care were lowest in the nursing home setting, even though nursing homes did not have the highest unmet needs for pain, dyspnea, and emotional support.17 Beyond the associations by volume, however, we found hospice program characteristics had a profound impact on a rating of “excellent.” “Excellent” ratings were lower in both for-profit hospices and corporate-owned hospices, and they were higher in small hospices. Some of this difference may be attributed to our under control for site of care, and thus a reflection that more nursing home care is provided by for-profit and corporate-owned hospices. Nevertheless, this finding as well as the descriptive findings showing several FEHC ratings for dementia patients appear to be better in not-for-profit vs. for-profit hospices emphasizes the need to further examine outcomes by hospice profit status, as suggested by others.20

The study has limitations on which we comment. First, the diagnosis of dementia was self-reported by survey respondents, potentially introducing some ascertainment bias. Also, the floor response rate of 20% may introduce some respondent bias. However, based on comparisons of the FEHC data with another nationwide data set,1 we found the FEHC data on hospice programs and decedents to be comparable to national data. In addition to these limitations, our power to detect potentially statistically significant differences by dementia volume was limited because of small sample sizes in some of the “proportion with dementia” categories. For even the significant findings reported, the confidence intervals were large (due in part to

<table>
<thead>
<tr>
<th>Hospice Variables</th>
<th>For-Profit Hospices (n = 106) Unmet patient needs Pain Coefficient (95% CI)</th>
<th>All Hospices (N = 396) Overall satisfaction: Excellent (vs. very good, good, fair, or poor) Coefficient (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion with dementia 13–19%</td>
<td>-0.0120 (-0.028, 0.004)</td>
<td>-0.011 (-0.028, 0.007)</td>
</tr>
<tr>
<td>Proportion with dementia ≥19%</td>
<td>-0.0167 (-0.031, -0.002)</td>
<td>-0.023 (-0.045, -0.002)</td>
</tr>
<tr>
<td>Hospice average daily census &lt; 51 patients</td>
<td>-0.0294 (-0.048, -0.011)</td>
<td>0.031 (0.014, 0.047)</td>
</tr>
<tr>
<td>For profit (yes)</td>
<td>N/A</td>
<td>-0.042 (-0.064, -0.021)</td>
</tr>
<tr>
<td>Corporate ownership (yes)</td>
<td>N/A</td>
<td>-0.044 (-0.062, -0.026)</td>
</tr>
<tr>
<td>Freestanding</td>
<td>N/A</td>
<td>0.012 (-0.002, 0.026)</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.116</td>
<td>0.323</td>
</tr>
</tbody>
</table>

CI = confidence interval.

*Reference group <13 % dementia.

Reference group average daily census ≥51 patients.

Reference group hospital or home health agency-based and other.

*fP < 0.01.

*P < 0.05.

*P < 0.001.
small sample sizes; Table 3). Another limitation was our inability to control for site of hospice care, and as such, nursing home care may have confounded some of the results.

Conclusion

Volume of dementia care provided by hospices was associated with family evaluation of hospice care only to a limited extent, and there were differential associations between volume of dementia and FEHC ratings by hospice profit status. Future research that includes site of care data is needed to better interpret the relationship between patient volume and the quality of hospice care for dementia, as well as the influence of ownership status on this relationship. Finally, this study emphasizes the need for examination of quality outcomes for hospice care by profit status, not only for dementia patients, but all hospice recipients.

References


