HEALTH CARE REFORM

The Optimal Delivery of Palliative Care

A National Comparison of the Outcomes of Consultation Teams vs Inpatient Units

David Casarett, MD, MA; Megan Johnson, BA; Dawn Smith, MS; Diane Richardson, PhD

Background: Growing attention to end-of-life care has led to intensive efforts to provide better palliative care. However, it is not known whether palliative care is best provided by consultative teams or in dedicated units.

Methods: This nationwide telephone survey was conducted in 77 Veterans Affairs medical centers that offer palliative care consultation services and dedicated palliative care units. One family member per patient who died at a participating Veterans Affairs medical center between July 1, 2008, and December 31, 2009, was invited to participate. The telephone survey included 1 global rating item and 9 core items describing the patient’s care in the last month of life.

Results: Interviews were completed with family members for 5901 of 9546 patients. Of these, 1873 received usual care, 1549 received a palliative care consultation, and 2479 received care in a palliative care unit. After non-response weighting and propensity score adjustment, families of patients who received a palliative care consultation were more likely than those who received usual care to report that the patient’s care in the last month of life had been “excellent” (adjusted proportions: 51% vs 46%; odds ratio [OR], 1.25; 95% confidence interval [CI], 1.02-1.55; \(P=0.04\)). However, families of patients who received care in a palliative care unit were even more likely to report excellent care (adjusted proportions: 63% vs 53%; OR, 1.52; 95% CI, 1.25-1.85; \(P<0.001\)).

Conclusion: Care received in palliative care units may offer more improvements in care than those achieved with palliative care consultations.

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Although most Americans prefer to die at home,1-4 the majority die in inpatient settings. In 2005, approximately 29% of Medicare deaths in the United States occurred in an acute care hospital and 72% of those patients were hospitalized at least once in the last month of life.5 In addition, approximately 25% of patients die in nursing homes,6 a number that is likely to increase.7

See Invited Commentary at end of article

Growing attention to end-of-life care has identified numerous problems with inpatient settings. For instance, many patients experience uncontrolled symptoms near the end of life.8,10 In addition, communication regarding patients’ illness and treatment is often insufficient,11-15 and both patients and their families may not receive the emotional support they need.10,16-18 Together, these problems contribute to families’ negative assessments of end-of-life care.19-23 To address these problems, hospitals and nursing homes have increasingly developed palliative care consultation teams.24-30 According to a survey conducted in 2008,31 31% of all US hospitals now provide some form of palliative care.

There also has been growing interest in distinct palliative care units.32 These units rely on dedicated staff to provide tertiary palliative care33 and are analogous to dedicated intensive care units.32,34,35 Palliative care units offer the potential to improve end-of-life care substantially. However, it is not known whether these units provide better care than a consultation team does. This question is important because dedicated palliative care units are resource intensive and require hospitals and nursing homes to make a substantial investment. Therefore, the goal of this study was to compare the effect of palliative care consultation teams with that of dedicated palliative care units on the quality of care in a national sample of hospitals and nursing homes in the Department of Veterans Affairs (VA) integrated health care system.

METHODS

Sample and Setting

Of 140 VA inpatient facilities in the United States and Puerto Rico, we analyzed those
At random for omission. For each patient, a family member was identified based on the VA’s policy of death notification: (1) next of kin; (2) primary contact named in the electronic medical record; and (3) durable power of attorney for health care. Because hospitals that had units also had consultation teams (but not vice versa), we reasoned that these hospitals represented a sample that is relatively homogeneous with respect to palliative care resources. Patients who died in one of these facilities were identified using the VA’s electronic medical record system. Medical record reviews were also used to confirm eligibility, define key patient characteristics (eg, age, ethnicity, and site of death), and identify the process of care that the patient received at the time of death (ie, usual care, palliative care consultation, or palliative care unit).

We excluded the records of patients who died as a result of suicide or accident and those who died within 24 hours of admission to the institution or in the emergency department, unless they had been admitted to a VA facility in the preceding month. During infrequent periods when the number of deaths exceeded interviewing capacity, patient records were selected at random for omission. For each patient, a family member was identified based on the VA’s policy of death notification: (1) next of kin; (2) primary contact named in the electronic medical record; and (3) durable power of attorney for health care.

Four weeks after the patient’s death, we sent an introductory letter to the family that included a toll-free telephone number that they could use to refuse to participate. Interviewers then made up to 3 telephone calls, including at least 1 after 5 PM local time Monday through Friday or on the weekend. We excluded family members who did not speak English or Spanish as well as those with a hearing impairment or other health condition that precluded a telephone interview. We also excluded family members who said they could not evaluate the care that the patient received in the last month of life; we asked them to identify a more knowledgeable informant, who was then contacted. At the conclusion of each telephone survey, families were asked whether they would like to be referred to a counselor for bereavement support or to a hospital representative for other questions or concerns. If, after 3 attempts, the interviewer was unable to reach the family member, or if a health condition precluded a telephone interview, we mailed an identical survey that was labeled to allow matching of the survey to the patient.

All surveys consisted of the short version of the Family Assessment of Treatment at End-of-Life, whose development, validity, and psychometric properties have been described.30,31 The survey has English and Spanish versions, both of which contain 10 core items (Table 1). Nine items measure specific aspects of care and use frequency-based response options whose scores are dichotomized as 1 for the best possible response or as 0 for all other responses. The 10th item, which asks families to evaluate the care that the patient received in the last month of life (poor, fair, good, very good, or excellent), is scored as excellent vs all other responses. We used this so-called top box scoring method to reduce the ceiling effects that are commonly observed in satisfaction surveys.

To account for potential nonresponse bias, we evaluated patient and family characteristics as potential predictors of survey completion (Table 2). Next, we used a multivariable logistic regression model to predict the likelihood of a completed survey for each patient in the sample, checking its performance by calculating the area under the receiver operating characteristic curve. For this and all subsequent models, we used robust jackknife standard errors, clustered by facility, including all variables that were independent predictors and adding additional variables to achieve the model with the lowest possible information criterion value.32 We then calculated a weight for each completed survey (the inverse of the probability that

<table>
<thead>
<tr>
<th>Table 1. Survey Items</th>
<th>Responses (Best Possible Response)</th>
<th>% With Best Possible Response (% Missing)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall, how would you rate the care that [PATIENT’S NAME] received in the last month of [HIS/HER] life?</td>
<td>Excellent/very good/good/fair/poor (excellent)</td>
<td>54.7 (1.3)</td>
</tr>
<tr>
<td>During [PATIENT’S NAME]’s last month of life, how much of the time were the doctors and other staff who took care of [HIM/HER] willing to take time to listen?</td>
<td>Always/usually/sometimes/never/did not speak to staff who took care of patient (always)</td>
<td>70.4 (1.3)</td>
</tr>
<tr>
<td>During [PATIENT’S NAME]’s last month of life, how often were the doctors and other staff who took care of [HIM/HER] kind, caring, and respectful?</td>
<td>Always/usually/sometimes/never/unsure (always)</td>
<td>79.4 (1.9)</td>
</tr>
<tr>
<td>During [PATIENT’S NAME]’s last month of life, how often did the doctors and other staff who took care of [HIM/HER] keep you or other family members informed about [HIS/HER] condition and treatment?</td>
<td>Always/usually/sometimes/never/unsure (always)</td>
<td>66.4 (1.7)</td>
</tr>
<tr>
<td>From what you know about [PATIENT’S NAME]’s time as an inpatient, how often do you think [HIS/HER] personal care needs—such as bathing, dressing, and eating meals—were taken care of as well as they should have been?</td>
<td>Always/usually/sometimes/never/unsure/staff wasn’t wanted or needed for personal care (always)</td>
<td>63.6 (3.2)</td>
</tr>
<tr>
<td>In the last month of [HIS/HER]’s life, did [PATIENT’S NAME] have pain or did HE/SHE take medicine for pain?</td>
<td>Yes/no/unsure/didn’t have pain</td>
<td>. . .</td>
</tr>
<tr>
<td>How often did [PATIENT’S NAME]’s pain make [HIM/HER] uncomfortable?</td>
<td>Always/usually/sometimes/never/unsure (never)</td>
<td>22.1 (19.1)</td>
</tr>
<tr>
<td>In [PATIENT’S NAME]’s last month of life, how much of the time did the doctors and other staff who took care of [HIM/HER] provide you and [PATIENT’S NAME] the kind of spiritual support that you and [HE/SHE] would have liked?</td>
<td>Always/usually/sometimes/never/did not want/did not need spiritual support (always)</td>
<td>45.7 (3.7)</td>
</tr>
<tr>
<td>In [PATIENT’S NAME]’s last month of life, how much of the time did the doctors and other staff who took care of [HIM/HER] provide you and [PATIENT’S NAME] the kind of emotional support that you and [HE/SHE] would have liked prior to [HIS/HER] death?</td>
<td>Always/usually/sometimes/never/unsure/did not want/did not need emotional support (always)</td>
<td>55.0 (3.1)</td>
</tr>
<tr>
<td>What about after [PATIENT’S NAME]’s death—How much of the time did the doctors and other staff who took care of [HIM/HER] provide you the kind of emotional support you would have wanted?</td>
<td>Always/usually/sometimes/never/unsure/did not want/did not need emotional support (always)</td>
<td>53.2 (3.9)</td>
</tr>
<tr>
<td>Would it have been helpful if the VA had provided more help with [PATIENT’S NAME]’s funeral arrangements?</td>
<td>Yes/no/unsure (no)</td>
<td>67.8 (6.4)</td>
</tr>
</tbody>
</table>

Abbreviations: ellipses, not applicable because there was no best possible answer (screening item); VA, Veterans Affairs.
that survey would be completed). Thus, groups of patients who were underrepresented in the sample were assigned a higher weight. We checked the appropriateness of the model by comparing the weighted sample characteristics with the characteristics of the entire population.

Next, we used propensity scores to account for nonrandom assignment among groups by constructing 2 separate logistic regression models (palliative care consultation vs usual care and palliative care unit vs palliative care consultation). For each pair, we first built a limited model that included only patient characteristics reported in Table 2 that were independently associated with group assignment. We then added variables systematically in all possible combinations and selected the one with the lowest Akaike information criterion. We used this model to predict group assignment in each pair and then used each patient’s propensity score to adjust the characteristics of the patients in each pair of groups. When groups were not balanced, additional characteristics were added to the model and balance was rechecked until the 2 models balanced all characteristics reported in Table 2.

Using nonresponse weights and propensity score adjustments, we compared the global item scores and individual item scores between usual care and palliative care consultations, and between palliative care consultations and palliative care units. These regression models also used robust jackknife standard errors, clustered by facility. Stata statistical software (Stata for Windows, version 10.0; StataCorp LP, College Station, Texas) was used for all analyses. We planned a sample of at least 1500 patients in the smallest of 3 groups (usual care, palliative care consultation, or palliative care unit) to provide adequate power to detect a 6% difference in the proportions of families reporting excellent care (1 − β = .84; α = .05, adjusted for multiple comparisons). Because this project was conducted as part of the VA’s operations and was designed primarily to provide VA hospitals with actionable quality data, institutional review board approval was not sought for data collection. An application for secondary use of these data for publication was granted an exemption by the institutional review board of the Philadelphia VA Medical Center.

### RESULTS

Medical record review identified 16,158 patients who died in 1 of 140 participating VA facilities between July 1, 2008, and December 31, 2009. We restricted this sample to 77 facilities that had both palliative care consultation teams and inpatient palliative care units. These 77 facilities were larger than those excluded (mean, 409 vs 272 beds; rank sum test, P < .001), had more inpatient admissions per year (mean, 9662 vs 6718; rank sum test, P < .001), and had more deaths per month (mean, 14.6 vs 8.1; rank sum test, P < .001). Patients from included and excluded facilities were similar, except that patients who died in facilities that were included were more likely to have cancer (51% vs 46%; odds ratio [OR], 1.24; 95% confidence interval [CI], 1.06-1.45; P = .006) and less likely to have kidney disease (38% vs 43%; OR, 0.78; 95% CI, 0.65-0.94; P = .009).

At these 77 facilities, 10,633 patients who died within the study period were identified. Of these patients’ family members, a total of 1087 were ineligible because they did not have a working telephone number or valid address (n = 1023) or there was no eligible respondent available (n = 64). Interviews could not be completed with 2630 eligible family members because they did not answer the telephone or return a mailed survey, and 642 family members refused an interview. In addition, 164 family members did not have adequate knowledge about the patient’s last month of life, 74 were reluctant to talk about the patient’s death, and 31 had health conditions that precluded an interview. Twelve respondents were excluded because they spoke neither English nor Spanish.

Surveys were completed with the remaining 5993 families. Of these, 92 did not complete the entire survey, 4946

### Table 2. Characteristics of Patients Receiving Usual Care, Care From a Palliative Care Consultation Team, and Care in a Palliative Care Unit

<table>
<thead>
<tr>
<th>Patient Characteristic</th>
<th>Usual Care (n=1873)</th>
<th>Palliative Care Consultation vs Usual Care (n=1549)</th>
<th>OR (95% CI)</th>
<th>P Value</th>
<th>OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (range), y</td>
<td>70 (27-101)</td>
<td>69 (27-100)</td>
<td>0.97 (0.91-1.03)</td>
<td>.29</td>
<td>71 (34-101)</td>
<td>1.03 (1.06-1.20)</td>
</tr>
<tr>
<td>Male sex</td>
<td>1835 (97.9)</td>
<td>1518 (97.9)</td>
<td>0.94 (0.74-1.20)</td>
<td>.62</td>
<td>2429 (97.9)</td>
<td>0.80 (0.58-1.09)</td>
</tr>
<tr>
<td>White race</td>
<td>1262 (68.4)</td>
<td>1067 (70.2)</td>
<td>1.14 (0.84-1.53)</td>
<td>.40</td>
<td>1872 (75.5)</td>
<td>1.42 (1.00-2.00)</td>
</tr>
<tr>
<td>Spouse is respondent</td>
<td>833 (44.5)</td>
<td>715 (46.2)</td>
<td>1.09 (0.91-1.31)</td>
<td>.33</td>
<td>980 (39.5)</td>
<td>0.78 (0.64-0.95)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>470 (25.1)</td>
<td>700 (45.2)</td>
<td>2.53 (2.15-2.98)</td>
<td>&lt;.001</td>
<td>1455 (58.7)</td>
<td>1.74 (1.48-2.06)</td>
</tr>
<tr>
<td>Heart failure</td>
<td>499 (26.6)</td>
<td>346 (22.3)</td>
<td>0.81 (0.67-0.98)</td>
<td>.03</td>
<td>503 (20.3)</td>
<td>0.86 (0.74-1.00)</td>
</tr>
<tr>
<td>Chronic lung disease</td>
<td>475 (25.4)</td>
<td>431 (27.8)</td>
<td>1.12 (0.94-1.35)</td>
<td>.21</td>
<td>713 (28.8)</td>
<td>1.09 (0.94-1.27)</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>738 (39.4)</td>
<td>599 (38.7)</td>
<td>0.99 (0.81-1.21)</td>
<td>.92</td>
<td>545 (21.9)</td>
<td>0.44 (0.34-0.55)</td>
</tr>
<tr>
<td>Stroke</td>
<td>121 (6.5)</td>
<td>92 (5.9)</td>
<td>0.86 (0.61-1.21)</td>
<td>.37</td>
<td>149 (6.0)</td>
<td>1.03 (0.72-1.46)</td>
</tr>
<tr>
<td>Liver disease</td>
<td>172 (9.2)</td>
<td>148 (9.6)</td>
<td>1.09 (0.83-1.44)</td>
<td>.53</td>
<td>192 (7.7)</td>
<td>0.80 (0.62-1.02)</td>
</tr>
<tr>
<td>Kidney disease</td>
<td>877 (46.8)</td>
<td>617 (39.8)</td>
<td>0.75 (0.61-0.92)</td>
<td>.007</td>
<td>676 (27.3)</td>
<td>0.55 (0.45-0.69)</td>
</tr>
<tr>
<td>PTSD</td>
<td>127 (6.8)</td>
<td>103 (6.6)</td>
<td>1.02 (0.72-1.46)</td>
<td>.89</td>
<td>183 (7.4)</td>
<td>1.06 (0.79-1.43)</td>
</tr>
<tr>
<td>Dementia</td>
<td>351 (18.7)</td>
<td>329 (21.2)</td>
<td>1.18 (0.94-1.48)</td>
<td>.14</td>
<td>622 (25.1)</td>
<td>1.26 (0.98-1.63)</td>
</tr>
<tr>
<td>Coronary artery disease</td>
<td>466 (24.9)</td>
<td>334 (21.6)</td>
<td>0.80 (0.67-0.94)</td>
<td>.008</td>
<td>463 (18.7)</td>
<td>0.87 (0.72-1.05)</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; OR, odds ratio; PTSD, posttraumatic stress disorder.

Multiple diagnoses were coded for each patient.
completed a telephone survey, and 955 completed a mailed survey. Mailed surveys and telephone interviews had similar scores, so their results were combined, producing a final sample of completed surveys for 5901 participants (61.8% of the 9546 who were eligible). Response rates were similar in the 2 palliative care groups, but were lower in the usual care group (palliative care consultation, 66.3%; palliative care unit, 64.8%; usual care, 51.3%).

In the optimal model of survey completion, the following characteristics were associated with response: diagnosis of dementia or chronic lung disease, white race, do-not-resuscitate order at the time of death, death in an intensive care unit, documented discussion with a family member, interview with the patient’s spouse (vs other relationships), and documented family contact with a chaplain or bereavement counselor. This model was homogeneous across the 3 treatment groups, producing weights that ranged from 1.25 to 4.08. After response weights were applied, all survey sample characteristics were within 1% of those of the entire sample, except for the proportion of patients with dementia (17.6% in the entire sample vs 19.3% in the weighted survey sample).

Of patients reported in the 5901 completed surveys, 1873 received usual care, 1549 received a palliative care consultation, and 2479 died in a palliative care unit (Table 2). Two propensity score models were generated to predict assignment in each of the 2 pairs (usual care vs palliative care consultation and palliative care consultation vs palliative care unit). Variables included in the model predicting palliative care consultation vs usual care included site of care (medical/surgical ward, intensive care unit, nursing home), age (in 10-year increments), race (white vs other), and diagnoses of cancer, heart failure, and coronary artery disease. Variables included in the model predicting care in a palliative care unit vs palliative care consultation included age (in 10-year increments), race (white vs other), respondent relationship (spouse vs other), and diagnoses of cancer, dementia, kidney disease, and coronary artery disease. After adjusting for a propensity score based on these variables, the 2 pairs of groups were balanced within 1% with respect to all variables reported in Table 2.

PALLIATIVE CARE CONSULTATION vs USUAL CARE

Families of patients who received a palliative care consultation were more likely than those of patients who received usual care to report that the patient’s care in the last month of life had been excellent (adjusted proportions: 73% vs 65%; OR, 1.51; 95% CI, 1.27-1.78; P < .001), and slightly more modest effects were found for emotional support before the patient’s death (adjusted proportions: 41% vs 35%; OR, 1.19; 95% CI, 1.07-1.32; P < .01) and for the degree to which providers gave enough emotional support (adjusted proportions: 51% vs 46%; OR, 1.25; 95% CI, 1.02-1.55; P = .04) (Table 3). Significant differences were found for 7 items, of which the largest effect sizes were noted for the degree to which providers gave enough emotional support (adjusted proportions: 52% vs 45%; OR, 1.36; 95% CI, 1.15-1.61; P = .001) and emotional support (adjusted proportions: 57% vs 49%; OR, 1.35; 95% CI, 1.14-1.60; P = .001) before the patient’s death. No significant differences were found for 3 items, including pain management (adjusted proportions: 26% vs 29%; OR, 0.84; 95% CI, 0.66-1.07; P = .15), assistance with funeral arrangements (adjusted proportions: 67% for both; OR, 1.00; 95% CI, 0.87-1.16; P = .98), and emotional support after the patient’s death (adjusted proportions: 59% vs 54%; OR, 1.20; 95% CI, 1.00-1.43; P = .05) (Table 3).

Patients who received palliative care consultations were more likely than those who received usual care to have a do-not-resuscitate order documented at the time of death (adjusted proportions: 95% vs 76%; OR, 5.41; 95% CI, 4.18-7.02; P < .001) and were more likely to have a documented chaplain visit (adjusted proportions: 39% vs 24%; OR, 2.04; 95% CI, 1.69-2.47; P < .001). Patients who received palliative care consultations were also more likely to have a documented discussion of goals of care in the last month of life (adjusted proportions: 95% vs 85%; OR, 3.64; 95% CI, 2.68-4.95; P < .001). Families of patients who received palliative care consultations were also more likely to receive a bereavement contact after the patient’s death (adjusted proportions: 18% vs 12%; OR, 1.60; 95% CI, 1.19-2.17; P = .002).

PALLIATIVE CARE UNITS vs PALLIATIVE CARE CONSULTATIONS

Compared with families of patients who received a palliative care consultation, families of patients who received care in a palliative care unit were more likely to report that the patient’s care in the last month of life had been excellent (adjusted proportions: 63% vs 53%; OR, 1.52; 95% CI, 1.25-1.85; P < .001) (Table 3). Among specific items, the largest effect size was found for emotional support before the patient’s death (adjusted proportions: 67% vs 57%; OR, 1.53; 95% CI, 1.26-1.86; P < .001), and slightly more modest effects were found for spiritual support (adjusted proportions: 62% vs 53%; OR, 1.45; 95% CI, 1.21-1.73; P < .001) and emotional support after the patient’s death (adjusted proportions: 68% vs 59%; OR, 1.45; 95% CI, 1.18-1.79; P = .001). Only pain management did not show a benefit of care in a dedicated palliative care unit (adjusted proportions: 24% vs 26%; OR, 0.90; CI, 0.73-1.11; P = .32).

Patients in palliative care units were more likely than those who received palliative care consultations to have a do-not-resuscitate order at the time of death (adjusted proportions: 98% vs 95%; OR, 3.11; 95% CI, 2.21-4.37; P < .001) and were more likely to have a documented chaplain visit (adjusted proportions: 45% vs 38%; adjusted OR, 1.35; 95% CI, 1.22-1.62; P < .001). They were not more likely to have a documented discussion of goals of care in the last month of life (96% vs 95%; adjusted OR, 1.35; 95% CI, 0.94-1.95; P = .108) but were more likely to receive a bereavement contact after the patient’s death (35% vs 18%; adjusted OR, 2.22; 95% CI, 1.53-3.23; P < .001).

COMMENT

Although most people would prefer to die at home, the majority will die in inpatient settings. Therefore, it is essential to identify ways that end-of-life care can be improved for patients who die in hospitals and nursing.
units already exist for many hospices, and consider-
of-Life Nursing Education Consortium programs. These
Education in Palliative and End-of-Life Care and End-
staff with specific training in palliative care, including the
physician coverage.32,34,35,43 In addition, these units have
order sets that ensure a standard of care independent of
liative care. These units are equipped to provide con-
consultations that further improvement would be difficult
high rate among patients who received palliative care con-
proved. The fourth, goal discussions, occurred at such a
stant processes of care (eg, goal discussions, chaplain sup-
palliative care consultations are associated with impor-
patients near the end of life. For instance,
guide the development of programs to care for these
homes. This study offers 2 key findings that should
quality of care for patients near the end of life. For instance,
palliative care consultations are effective in improving the qual-
processes of care (eg, goal discussions, chaplain support)
and improved families’ perceptions of outcomes. Pre-
results confirm that palliative care consultations can play
a key role in improving care of patients who die in hos-
Second, this study found that care in a palliative care
unit offers significant advantages compared with a pal-
consultation. Indeed, for almost every aspect of care assessed, families reported better outcomes
when the patient received care in a palliative care unit
than they did when the patient received a palliative care consultation. Three of 4 process measures were also
improved. The fourth, goal discussions, occurred at such a
high rate among patients who received palliative care cons-
consultations that further improvement would be difficult
to achieve.

Therefore, it is possible that dedicated palliative care units offer substantial advantages over consultative palli-
these units are equipped to provide con-
continuous palliative care and typically have protocols and order sets that ensure a standard of care independent of physician coverage.32,34,35,43 In addition, these units have
staff with specific training in palliative care, including the
Education in Palliative and End-of-Life Care and End-
Life Nursing Education Consortium programs. These
units already exist for many hospices, and consider-

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Palliative Care Consultation vs Usual Care Adjusted Mean Score ( P ) Value</th>
<th>Palliative Care Unit vs Palliative Care Consultation Adjusted Mean Score ( P ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall care was excellent</td>
<td>51 (vs 46)</td>
<td>1.25 (1.02-1.55)</td>
</tr>
<tr>
<td>Providers took time to listen</td>
<td>70 (vs 65)</td>
<td>1.25 (1.08-1.44)</td>
</tr>
<tr>
<td>Providers were kind, caring, and respectful</td>
<td>79 (vs 75)</td>
<td>1.26 (1.03-1.54)</td>
</tr>
<tr>
<td>Providers kept family members informed</td>
<td>65 (vs 58)</td>
<td>1.31 (1.11-1.56)</td>
</tr>
<tr>
<td>Patient’s personal care needs were met</td>
<td>64 (vs 61)</td>
<td>1.16 (1.02-1.33)</td>
</tr>
<tr>
<td>Patient’s pain was controlled</td>
<td>26 (vs 29)</td>
<td>0.84 (0.66-1.07)</td>
</tr>
<tr>
<td>Providers gave enough spiritual support</td>
<td>52 (vs 45)</td>
<td>1.38 (1.15-1.61)</td>
</tr>
<tr>
<td>Providers gave enough emotional support before the patient’s death</td>
<td>57 (vs 49)</td>
<td>1.35 (1.14-1.60)</td>
</tr>
<tr>
<td>Providers gave enough emotional support after the patient’s death</td>
<td>59 (vs 54)</td>
<td>1.20 (1.00-1.43)</td>
</tr>
<tr>
<td>Providers gave enough help with funeral arrangements</td>
<td>67 (vs 67)</td>
<td>1.00 (0.87-1.16)</td>
</tr>
</tbody>
</table>

Abbreviations: CI, confidence interval; OR, odds ratio.

The palliative care consultation model included site of care (ward, intensive care unit, nursing home), age (in 10-year increments), race (white vs other), and diagnoses of cancer, heart failure, and coronary artery disease. The palliative care unit model included age (in 10-year increments), race (white vs other), respondent relationship (spouse vs other), and diagnoses of cancer, dementia, kidney disease, and coronary artery disease. Unless otherwise indicated, values are given as percentages.

First, these results provide convincing evidence that pal-
iative care consultations are effective in improving the qual-
ity of care for patients near the end of life. For instance,
palliative care consultations are associated with impor-
tant processes of care (eg, goal discussions, chaplain support)
and improved families’ perceptions of outcomes. Pre-
vious studies have documented a positive effect in
in contexts or in the context of controlled clini-
tials.28-30,39-42 Our study provides valuable evidence of
the effect that palliative care consultations can have across
a wide range of hospitals in a nationwide sample. These
results confirm that palliative care consultations can play
a key role in improving care of patients who die in hos-
pitals and nursing homes.

Second, this study found that care in a palliative care
unit offers significant advantages compared with a pal-
consultation. Indeed, for almost every aspect of care assessed, families reported better outcomes
when the patient received care in a palliative care unit
than they did when the patient received a palliative care consultation. Three of 4 process measures were also
improved. The fourth, goal discussions, occurred at such a
high rate among patients who received palliative care cons-
consultations that further improvement would be difficult
to achieve.

Therefore, it is possible that dedicated palliative care units offer substantial advantages over consultative palli-
these units are equipped to provide con-
continuous palliative care and typically have protocols and order sets that ensure a standard of care independent of physician coverage.32,34,35,43 In addition, these units have
staff with specific training in palliative care, including the
Education in Palliative and End-of-Life Care and End-
Life Nursing Education Consortium programs. These
units already exist for many hospices, and consider-

However, the benefits of palliative care consultations
and inpatient units were not observed across all
domains of care. These results should not be surprising,
as studies in more limited settings have noted that pal-
liative care consultations may have a greater effect on
some aspects of care than on others.30,39-41,44,45 It is possible
that some aspects of care (eg, emotional support for families after death) require more time and resources than most palliative care teams have. It is also possible
that patients and families with greater needs for care (eg, patients with severe pain) are more likely
to receive a consultation and are more likely to be
referred to a palliative care consultation team or inpa-
tient unit. In the present study, we were unable to
adjust for pain severity or other markers of palliative
care needs. Therefore, this possibility should be evalu-
ated in future research.

This study has 3 limitations. First, because veterans
using VA resources tend to be older men, the study sample
is one that is demographically atypical of the general US
population.46 However, there is no reason to expect that
the effect described here of palliative care consultations
and palliative care units would be markedly different in
another population.

Second, these results rely mostly on families’ perceptions of care. Families may not always be able to assess
the quality of care accurately. Nevertheless, they can
offer a valuable perspective. Moreover, in the current
study, an evaluation of families’ perceptions and process
measures both suggest the superiority of inpatient
units, lending support to the usefulness of families’ views of care.

Third, this study used techniques of weighting and propen-
sity score adjustment to account for nonresponse bias
and nonrandom assignment, respectively. These tech-
niques are widely accepted and are being used increasingly in health services research. Nevertheless, their effectiveness depends on the accurate measurement of variables of interest, and there is always the possibility that other, unmeasured characteristics might have altered the results we report.

As increasing attention focuses on improving the quality of care that patients receive at the end of life, it will be essential to develop mechanisms of care that are effective and evidence-based. The results reported here suggest that the palliative care consultation teams that are in widespread use offer substantial benefits to patients and their families. However, dedicated units may be even more effective. Creation of dedicated palliative care units that were included in this study has been possible only because the VA has invested substantially in the development of palliative care infrastructure, including staffing and construction. In other settings, a business case will need to be made that these units improve quality and decrease costs. Therefore, before such units are widely adopted, more research is needed to demonstrate that they are cost-effective.

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Author Contributions: All authors had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Casarett. Acquisition of data: Johnson and Smith. Analysis and interpretation of data: Casarett, Johnson, Smith, and Richardson. Drafting of the manuscript: Casarett, Johnson, Smith. Critical revision of the manuscript for important intellectual content: Casarett, Johnson, Smith, and Richardson. Statistical analysis: Smith and Richardson. Obtained funding: Casarett. Administrative, technical, and material support: Casarett and Johnson. Study supervision: Casarett.

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REFERENCES


Identifying the Effective Components of Palliative Care

Palliative care is a new medical specialty that aims to improve quality of care for persons with serious and advanced illness through clear and direct communication between the interdisciplinary care team, patients, and families; effective management of pain and other symptoms; coordination and continuity of care; and treatment aligned with patient and family goals. Palliative care can be offered with life-prolonging therapies and is appropriate at any point in a serious illness. Benefits of palliative care include increased patient and caregiver satisfaction, lower costs, and improved quality of life and clinical outcomes. Few studies, however, have compared different palliative care delivery models to assess their effect on outcomes.

Casarett and colleagues report on a propensity score matched survey of VA hospitals and nursing homes comparing family satisfaction with services provided by a palliative care consultation team vs a dedicated palliative care unit. The investigators surveyed family members of 5901 patients who died at one of 77 VA medical centers that offer both inpatient models of care. Family members of patients who received a palliative care consultation were more likely to report excellent care in the last month of life than were families of those who did not receive palliative care. Families of patients in the palliative care unit were even more likely to report excellent care when compared with families of patients who received a consultation. The palliative care unit group also scored highest in 3 of 4 process measures (do-not-resuscitate order at time of death, documented chaplain visit, and bereavement contact after the patient’s death). The study was not designed to determine what services provided by the palliative care consultation team or the palliative care unit resulted in these improved outcomes.

The data provided by this study should be weighed with other factors when choosing the optimal palliative care model for a specific institutional environment. A dedicated unit offers direct control over implementation of clinical recommendations, the presence of skilled interdisciplinary staff, and a care setting designed for the needs of seriously ill patients. Under circumstances of difficult to-control symptom distress, family exhaustion, or lack of adequate community support services, a palliative care unit may provide the safest and highest quality of care. Drawbacks of a palliative care unit might include limited bed availability and decreased opportunity to promote palliative care practices throughout the hospital. A consultative team, in contrast, is less resource intensive, can deliver care to many more patients and family members, and may be able to promote the importance of the palliative care approach to a wider audience. The question for those planning a hospital palliative care program may not be whether to choose a dedicated unit or consultative services, but rather how to implement the best components of each. Despite the pressures for quick hospital discharge, some seriously ill and dying patients cannot be adequately cared for in the community. For these individuals, palliative care teams may need to provide primary management in the hospital, whether within various wards or a dedicated palliative care unit, as staffing and resources allow.

This study provides evidence that either of these 2 palliative care models can play a key role in improving the care of patients who die in hospitals and nursing homes. For well-established programs, the addition of a palliative care consultation team can be a cost-effective means of improving patient care. For those who are just beginning such programs, the development of a consultative team should be considered.