# Comparing clinician ratings of the quality of palliative care in the intensive care unit*

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***Objective:*** **There are numerous challenges to successfully integrating palliative care in the intensive care unit. Our primary goal was to describe and compare the quality of palliative care delivered in an intensive care unit as rated by physicians and nurses working in that intensive care unit.**

***Design:*** **Multisite study using self-report questionnaires.**

***Setting:*** **Thirteen hospitals throughout the United States.**

***Participants:*** **Convenience sample of 188 physicians working in critical care (attending physicians, critical care fellows, resident physicians) and 289 critical care nurses.**

***Measurements and Main Results:*** **Clinicians provided overall ratings of the care delivered by either nurses or physicians in their intensive care unit for each of seven domains of intensive care unit palliative care using a 0–10 scale (0 indicating the worst possible and 10 indicating the best possible care). Analyses included descriptive statistics to characterize measurement characteristics of the ten items, paired Wilcoxon tests comparing item ratings for the domain of symptom management with all other item ratings, and regression analyses assessing differences in ratings within and between clinical disciplines. We used $p < .001$ to denote statistical significance to address multiple comparisons. The ten items demonstrated good content validity with few missing responses or ceiling or floor effects. Items receiving the lowest ratings assessed spiritual support for families, emotional support for intensive care unit clinicians, and palliative-care education for intensive care unit clinicians. All but two items were rated significantly lower than the item assessing symptom management ($p < .001$). Nurses rated nursing care significantly higher ($p < .001$) than physicians rated physician care in five domains. In addition, although nurses and physicians gave comparable ratings to palliative care delivered by nurses, nurses' and physicians' ratings of physician care were significantly different with nurse ratings of this care lower than physician ratings on all but one domain.**

***Conclusion:*** **Our study supports the content validity of the ten overall rating items and supports the need for improvement in several aspects of palliative care, including spiritual support for families, emotional support for clinicians, and clinician education about palliative care in the intensive care unit. Furthermore, our findings provide some preliminary support for surveying intensive care unit clinicians as one way to assess the quality of palliative care in the intensive care unit. (Crit Care Med 2011; 39:975–983)**

**KEY WORDS: palliative care; end-of-life care; dying; death; quality of care**

Approximately 20% of Americans die in the intensive care unit (ICU) or shortly after a stay in the ICU and therefore palliative care is an important aspect of an ICU clinician's daily scope of practice (1). The importance of palliative care in the ICU has also been supported by a number of recent statements from critical care professional societies (2, 3), and its successful integration into care in the ICU has been shown to be associated with a number of key outcomes. These outcomes include improved quality of dying and death, shorter ICU length of stay for patients who die in the ICU, and reductions in family psychological symptoms after a patient's death (4–7).

To improve palliative care in ICU settings, it is necessary to specify and measure those aspects of palliative care that contribute to high quality care (8). A recent report from the Robert Wood Johnson Foundation's Critical Care End-of-Life Peer Work Group identified seven specific palliative care domains (9). These domains were developed through extensive literature review as well as iterative and collaborative expert consensus process. The domains included: 1) patient- and family-centered decisionmaking; 2) communication within the team and with patients and families; 3) continuity of care; 4) emotional and practical support for families; 5) symptom management and comfort care; 6) spiritual support of patients and families; and 7) emotional and organizational support for ICU clinicians (10). Such domains form the basis for a comprehensive approach to measuring the quality of palliative care in the ICU.

In addition to developing measurement items that represent these domains, it is also important to select respondents

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***See also p. 1204.**

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who have participated in and can evaluate palliative care in the ICU. Patients and their families are important sources of such evaluation and should generally be considered the "gold standard." Unfortunately, patient and family report data are often challenging to obtain. Patients are typically too ill or sedated to respond to surveys (11). Family members are often dealing with depression and anxiety (12) and their perspectives may represent their own experiences rather than those of the patient (13–16). There is also evidence that bias introduced by low family response rates results in an overestimation of the quality of palliative care in the ICU (17). In addition, evaluations by patients and families may be limited by the lack of prior experience with ICU care or by low expectations for quality of care. ICU clinicians are less likely to have these limitations. Prior studies have shown that family members have given higher ratings of quality of end-of-life care than ICU nurses or resident physicians, suggesting that clinicians may be more critical raters of the quality of ICU palliative care (18, 19). Finally, although the medical record may provide useful information about quality of end-of-life care, it can only reflect the documentation of such care and such documentation may be limited (20, 21).

Clinicians are in a unique position to evaluate the quality of palliative care. They can place their assessments within a framework of prior experiences and may be able to assess care that is not always well documented in the medical record. Some prior studies have examined clinicians' ratings of quality of dying and death for critically ill patients (5, 19, 22) but to date, there are few assessments of ICU clinicians' perceptions of palliative care quality in their ICUs (23, 24). These prior studies have shown interesting differences between ratings of nurses and the rating of physicians, suggesting this comparison may be instructive.

In this study, we piloted ten items providing overall ratings of the quality of palliative care in the ICU from physicians and nurses. These items were based on the seven domains described previously (9). Our goal was twofold: 1) to examine the items' content validity; and 2) to use the items to describe the quality of palliative care in the ICU from the perspective of ICU physicians and nurses to identify potential targets for quality improvement. To explore the items' content validity, we examined each item's distributional characteristics. To describe the quality of palliative care, we examined 1) mean scores for each item as compared with the item assessing symptom management with the rationale that that symptom management is a standard and primary skill of palliative care (2, 25–27); 2) item ratings of the quality of palliative care delivered by the respondent's discipline (eg, physicians rating physician care) as compared with ratings by respondents from another discipline (eg, nurses rating physician care); and 3) within the physician group, housestaff item ratings as compared with attending physician item ratings.

## METHODS

### Sample

Using a self-report questionnaire, we conducted a multisite study with nurses, attending physicians, and housestaff (ie, residents, fellows) assessing the quality of palliative care provided by physicians and nurses in their ICU. Thirteen hospitals throughout the United States participated as part of a convenience sample. Seven of the 13 sites were university-affiliated medical centers and the remaining were community hospitals.

### Survey Items

The ten items that are used in this study were selected from a longer survey that included 61 items in the physician version and 63 items in nurse version. The full set of items was designed to sample each of the seven domains of quality care developed by the Robert Wood Johnson Foundation's Critical Care End-of-Life Peer Work Group and was based on the 53 items in that report (9). Investigators (J.R.C., J.N., J.L., D.E.R., M.M.L.) piloted the items through repeated administration, developing the questionnaire's face validity through this process. Items were written to assess care provided in the ICU generally rather than to assess the care of a specific patient.

Before selecting the summary items as the focus on this analysis, we completed factor analytic studies using all items in an attempt to identify empirically derived domains and consider creating a multi-item scale that produced a single score. These analyses did not identify solutions that met acceptable standards for scale development (data not shown). Consequently, we chose to report only scores for the summary item ratings that were developed to represent each of the seven domains and we do not propose development of a multi-item score from these items at this time.

The summary items (the focus of the present report) asked respondents to evaluate the overall quality of care in each of the seven quality-of-care domains. In four of the domains, a single question is used; in three of the domains, two questions are used. The domains with two items allowed us to assess dual features of that domain (ie, continuity of care among caregivers or colleagues, communication of goals of care with team or patients/families, emotional or educational support to ICU clinicians). Each of the ten overall rating items was examined separately. The summary rating items use a 0–10 scale with 0 indicating the worst possible care and 10 indicating the best possible care. Respondents were asked to rate each of the ten summary items once for care delivered by doctors and once for care delivered by nurses. The full survey is in the public domain and available online (https://depts.washington.edu/eolcare).

### Data Collection

Questionnaire data were collected from November 2003 to December 2004. At each ICU, we contacted medical and nursing directors or their designees to gain permission and access to physicians and nurses working in the ICU. A research nurse performed site visits over 1–2 days at each participating ICU. To encourage participation, she provided lunch at each site and invited clinicians to complete surveys at that time. In addition, surveys were available at the nursing stations of each ICU for clinicians who could not attend the lunch session. All site visits occurred during daytime hours.

Volunteer participants completed questionnaires anonymously and no signups or logs were kept of potential participants. It was not feasible to assess the number of potentially eligible clinicians at each site as a result of the diverse staffing patterns in the different ICUs. All study procedures were approved by the Institutional Review Board at Rhode Island Hospital and approved or determined to be exempt from institutional review at the other institutions.

### Analyses

*Content Validity.* Content validity is supported when an instrument is appropriate relative to its intended use (28). Appropriateness may be determined by examining the distributional characteristics of an instrument or items; these characteristics may include the number of valid responses, the use of the full range of scores with little skew, and few ceiling scores (scores at the very top of the response scale) and floor scores (scores at the very bottom of the response scale) (29). We used descriptive statistics (percent missing responses, skew, percent scores of "0," percent scores of "10") to assess each item's performance in comparison with the following stan-

Table 1. Participant characteristics

| ICU Type | Academic Affiliation | No. of Beds | Physicians (n = 188) | Nurses (n = 289) |
|---|---|---|---|---|
| Medical | | | | |
| Site 1 | X | 8 | 9 | 23 |
| Site 2 | X | 8 | 19 | 22 |
| Site 3 | X | 14 | 22 | 23 |
| Site 4 | X | 14 | 19 | 21 |
| Site 5 | X | 18 | 6 | 16 |
| Site 6 | X | 14 | 7 | 20 |
| Site 7 | | 12 | 17 | 13 |
| Surgical | | | | |
| Site 8 | X | 24 | 16 | 17 |
| Site 9 | X | 16 | 13 | 30 |
| General/combined/other | | | | |
| Site 10 | | 16 | 20 | 20 |
| Site 11 | | 9 | 7 | 11 |
| Site 12 | | 27 | 13 | 22 |
| Site 13 | | 24 | 7 | 21 |
| Site 14 | | 12 | 9 | 14 |
| Site 15 | X | 9 | 4 | 16 |

ICU, intensive care unit.

dards: 1) ≤5% missing responses; 2) distributions with skew less than ±1.00; 3) ≤5% of floor scores of "0"; and 4) ≤5% of ceiling scores of "10."

*Quality of Palliative Care.* Descriptive statistics (means, SDs) were used to assess survey responses provided by physicians and nurses. To compare quality ratings for all domains with ratings of symptom management, we used paired Wilcoxon tests. To compare ratings within and across disciplines, we used robust regression analyses controlling for site with dummy indicators and respondent type (physician vs. nurse or housestaff vs. attending) as the predictor. Because these items have not been previously validated, we do not have an estimate of their minimum clinically important difference. We have therefore reported effect sizes using Cohen's *d*. We chose a stringent $p$ value for significance ($p < .001$) to account for the large number of comparisons.

## RESULTS

A total of 289 nurses and 188 physicians (83 attending physicians, 104 residents/fellows, one physician with unreported status) completed the survey at 15 ICUs in 13 institutions (Table 1).

*Content Validity.* Item completion rates for all items and for all respondents (ie, physicians, nurses) ranged from 94.1% to 99.5% for physicians and 95.8% to 99.7% for nurses (Table 2). With the exception of two items reported by physicians, all items met our expectation that ≥95% of participants answered each item (ie, "How well does your organization support the provision of emotional support for nurses caring for dying patients?"; "How well does your organization support the provision of education about palliative care for nurses?"). Item distributions generally met the requirement of skew not exceeding ±1.00 with the following exceptions: two items answered by physician respondents assessing continuity of care (nurses' communication with colleagues about patient/family emotional needs, physicians' communication of goals of care to next caregivers) and four items answered by nurse respondents assessing continuity of care (nurses' communication with colleagues about patient/family emotional needs, nurses' attention to patients/families' emotional and practical needs, nurses' symptom management and comfort care, and nurses' support for patients/families' spiritual needs). Skew ranged from −1.41 to −1.04 with a larger proportion of responses in the higher response categories for these skewed distributions.

Endorsements of floor scores of "0" ranged from 0% to 3.7% for physician-completed items and from 0% to 8.0% for nurse-completed items. Only two items completed by nurses had >5% of scores at the response scales' floor: "How well does your organization support the provision of emotional support for physicians caring for dying patients?"(8.0%) and "How well does your organization support the provision of education about palliative care for physicians?" (5.9%). Endorsement of ceiling scores of "10" ranged from 2.1% to 26.1% for physician respondents and from 0.7% to 27.7% for nurse respondents. Ceiling scores exceeded 5% on 14 of the 20 items. The item with the highest ceiling scores was "How well do nurses in your ICU manage symptoms and provide comfort care?"(physician respondents = 26.1%; nurse respondents = 27.7%).

*Comparison of Each Item to the Symptom Management Item.* Ratings in each of the ten summary items were all significantly lower than ratings for symptom management, our standard for comparison, with two exceptions: 1) physician ratings of their own ability to communicate goals of care to patients and families; 2) nurse ratings of physicians' ability to elicit and respect patients' and families' preferences about goals of care and treatments. The significantly lower scores in comparison to symptom management persisted regardless of the respondent pattern (ie, nurses evaluating nursing care, nurses evaluating physician care, physicians evaluating physician care, physicians evaluating nursing care) (Fig. 1).

*Respondents Rating Care by Their Own Discipline.* Respondents in both disciplines (nurses and physicians) rating care provided by their own discipline gave the highest ratings to symptom management (nurse mean = 8.61, physician mean = 8.32) and to eliciting and respecting patients' and families' preferences about goals of care and treatment (nurse mean = 8.11, physician mean = 8.05). They gave the lowest ratings regarding care by their own discipline to spiritual support for families (nurse mean = 7.89, physician mean = 6.26), emotional support for clinicians caring for dying patients (nurse mean = 5.95, physician mean = 5.02), and education about palliative care (nurse mean = 5.76, physician mean = 5.97) (Table 3).

*Nurses Rating Nurses Compared With Physicians Rating Physicians.* Nurses' ratings of care by nurses were significantly higher than physicians' ratings of care by physicians on five of the ten items ($p <$ .001): continuity of care with colleagues, continuity of care with the next caregivers, emotional and practical support for the patient and family, spiritual support for the patient and family, and emotional support for clinicians. Effect sizes for these significant differences ranged from 0.36 to 0.84, qualifying as small (0.20), medium (0.50), and large (0.80) effects using Cohen's *d* (30) (Table 3).

*Ratings of Own Compared With Rating of Other Discipline.* Nurses' ratings of physician care were significantly lower than physicians' ratings of physician care

**Table 2.** Item distributional characteristics: Nurse and physician respondents

| | Nurse Respondents | | | | | Physician Respondents | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Valid Percent | Percent "0" | Percent "10" | Skew | No. | Valid Percent | Percent "0" | Percent "10" | Skew |
| Communication within the team and with patients and families | | | | | | | | | | |
| How well do physicians in your ICU communicate with members of the clinical team to clarify goals of care? | 285 | 98.6% | 0.3 | 3.5 | −.449 | 187 | 99.5% | 0.0 | 10.1 | −.524 |
| How well do nurses in your ICU communicate with members of the clinical team to clarify goals of care? | 287 | 99.3% | 0.0 | 12.8 | −.839 | 185 | 98.4% | 0.0 | 9.6 | −.980 |
| How well do physicians in your ICU communicate with patients and families about goals of care and treatment? | 286 | 99.0% | 0.3 | 5.5 | −.558 | 187 | 99.5% | 0.0 | 10.6 | −.486 |
| How well do nurses in your ICU communicate with patients and families about goals of care and treatment? | 287 | 99.3% | 0.0 | 14.2 | −.762 | 184 | 97.9% | 0.0 | 12.8 | −.641 |
| Patient- and family-centered decisionmaking | | | | | | | | | | |
| How well do physicians in your ICU elicit and respect patient's and/or families preference regarding goals of care and treatment? | 285 | 98.6% | 0.3 | 9.3 | −.576 | 187 | 99.5% | 0.0 | 13.8 | −.745 |
| How well do nurses in your ICU elicit and respect patient's and/or families preference regarding goals of care and treatment? | 287 | 99.3% | 0.0 | 15.9 | −.618 | 184 | 97.9% | 0.0 | 15.4 | −.858 |
| Continuity of care | | | | | | | | | | |
| How well do physicians in your ICU communicate with colleagues about the patient's and/or family's emotional needs? | 282 | 97.6% | 1.7 | 4.5 | −.293 | 187 | 99.5% | 0.0 | 4.8 | −.631 |
| How well do nurses in your ICU communicate with colleagues about the patient's and/or family's emotional needs? | 287 | 99.3% | 0.0 | 13.8 | −1.328 | 183 | 97.3% | 0.0 | 10.1 | −1.410 |
| How well do physicians in your ICU communicate the goals of care to the next caregivers? | 283 | 97.9% | 2.1 | 7.3 | −.540 | 186 | 98.9% | 0.0 | 6.4 | −1.138 |
| How well do nurses in your ICU communicate the goals of care to the next caregivers? | 287 | 99.3% | 0.0 | 18.0 | −.893 | 182 | 96.8% | 0.0 | 13.3 | −.989 |
| Emotional and practical support for patients and families | | | | | | | | | | |
| How well do physicians in your ICU pay attention to emotional and practical needs of dying patients and their families? | 286 | 99.0% | 1.0 | 5.5 | −.321 | 187 | 99.5% | 0.0 | 8.0 | −.716 |
| How well do nurses in your ICU pay attention to emotional and practical needs of dying patients and their families? | 288 | 99.7% | 0.0 | 23.2 | −1.308 | 185 | 98.4% | 0.0 | 17.0 | −.724 |
| Symptom management and comfort care | | | | | | | | | | |
| How well do physicians in your ICU manage symptoms and provide comfort care? | 286 | 99.0% | 0.7 | 11.1 | −.734 | 187 | 99.5% | 0.0 | 20.7 | −.424 |
| How well do nurses in your ICU manage symptoms and provide comfort care? | 287 | 99.3% | 0.0 | 27.7 | −1.054 | 185 | 98.4% | 0.0 | 26.1 | −.574 |
| Spiritual support for patients and families | | | | | | | | | | |
| How well do physicians in your ICU assess the spiritual/religious needs of the patients and families? | 285 | 98.6% | 4.2 | 2.4 | −.076 | 187 | 99.5% | 0.5 | 5.3 | −.420 |
| How well do nurses in your ICU assess the spiritual/religious needs of the patients and families? | 288 | 99.7% | 0.0 | 15.9 | −1.044 | 183 | 97.3% | 0.0 | 8.5 | −.496 |
| Emotional and organizational support for ICU clinicians | | | | | | | | | | |
| How well does your organization support the provision of emotional support for physicians caring for dying patients? | 279 | 96.5% | 8.0 | 0.7 | −.060 | 186 | 98.9% | 3.7 | 2.1 | −.196 |
| How well does your organization support the provision of emotional support for nurses caring for dying patients? | 287 | 99.3% | 2.8 | 6.2 | −.406 | 177 | 94.1% | 1.1 | 2.7 | −.528 |
| How well does your organization support the provision of education about palliative care for physicians? | 277 | 95.8% | 5.9 | 1.7 | −.063 | 186 | 98.9% | 1.1 | 3.2 | −.441 |
| How well does your organization support the provision of education about palliative care for nurses? | 287 | 99.3% | 2.4 | 3.5 | −.403 | 177 | 94.1% | 0.0 | 3.2 | −.759 |

ICU, intensive care unit.

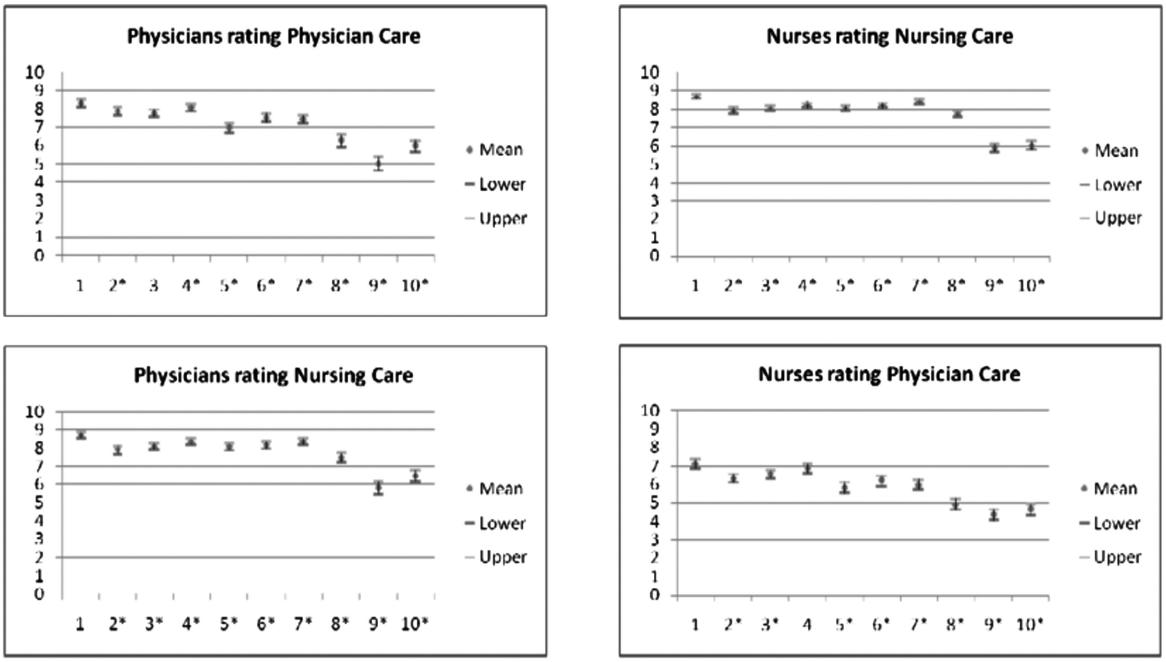

Figure 1. Intensive care unit (ICU) clinician ratings of the quality of ICU palliative care comparing the domain of symptom management vs. the other six domains of ICU palliative care: 1) symptom management and comfort care; 2) communication with the team to clarify goals of care; 3) communication with patients and family about goals of care and treatment; 4) eliciting and respecting patients' and families' preferences about goals of care and treatment; 5) communicating with colleagues about patients' and families' emotional needs; 6) communicating care goals to the next caregivers; 7) attending to emotional and practical patient and family needs; 8) assessing spiritual and religious needs of the patients and families; 9) providing emotional support to clinicians; 10) education about palliative care. *Significantly lower than the symptom management and comfort care domain at $p < .001$.

**Table 3.** Nurse and physician ratings within disciplines[a]

| | Nurses Rating Nursing Care (n = 289) Mean (SD) | Physicians Rating Physician Care (n = 188) Mean (SD) | Effect Size: Cohen's *d* | $p^a$ |
|---|---|---|---|---|
| Domain 1: Symptom management and comfort care | 8.61 (1.28) | 8.32 (1.28) | 0.23 | .007 |
| Domain 2a: Communication about goals of care: within the team | 7.96 (1.45) | 7.87 (1.33) | 0.06 | .392 |
| Domain 2b: Communication about goals of care: with patients and families | 8.02 (1.42) | 7.78 (1.38) | 0.17 | .046 |
| Domain 3: Patient- and family-centered decisionmaking | 8.11 (1.33) | 8.05 (1.39) | 0.04 | .472 |
| Domain 4a: Continuity of care: with colleagues | 8.04 (1.51) | 6.96 (1.78) | 0.65 | <.001 |
| Domain 4b: Continuity of care: with caregivers | 8.25 (1.35) | 7.53 (1.58) | 0.49 | <.001 |
| Domain 5: Emotional and practical support for patients and families | 8.43 (1.41) | 7.43 (1.61) | 0.66 | <.001 |
| Domain 6: Spiritual support for patients and families | 7.89 (1.71) | 6.26 (2.14) | 0.84 | <.001 |
| Domain 7a: Emotional and organizational support to ICU clinicians; emotional | 5.95 (2.63) | 5.02 (2.47) | 0.36 | <.001 |
| Domain 7b: Emotional and organizational support to ICU clinicians; educational | 5.76 (2.53) | 5.97 (2.15) | 0.09 | .413 |

ICU, intensive care unit.

[a] $p$ values based on robust regression analyses controlling for site.

at $p < .001$ on all except one item (provision of emotional support for clinicians caring for dying patients, $p = .009$; Table 4). Effect sizes were moderate to large, ranging from 0.54 to 0.92. In contrast, nursing care was rated similarly by both nurses and physicians (Table 4).

*Ratings of Housestaff Compared With Attending Physicians.* Housestaff rated physician care significantly higher only on the patient- and family-centered decisionmaking item and the effect size was moderate (0.52). We found trends toward higher ratings by housestaff (at a $p$ value <.05 but >.001) for six additional items (Table 5).

## DISCUSSION

We had two primary goals in this study: 1) to evaluate the content validity

**Table 4.** Nurse and physician ratings within and across disciplines[a]

| | Ratings of Physician Care | | | | Ratings of Nursing Care | | | |
|---|---|---|---|---|---|---|---|---|
| | Nurses' Ratings (n = 289) | Physicians' Ratings (n = 188) | Effect Size: Cohen's *d* | $p^b$ | Nurses' Ratings (n = 289) | Physicians' Ratings (n = 188) | Effect Size: Cohen's *d* | $p^c$ |
| Domain 1: Symptom management and comfort care | 7.12 (2.07) | 8.32 (1.28) | 0.70 | <.001 | 8.61 (1.28) | 8.75 (1.04) | 0.12 | .259 |
| Domain 2a: Communication about goals of care: within the team | 6.33 (1.96) | 7.87 (1.33) | 0.92 | <.001 | 7.96 (1.45) | 7.91 (1.41) | 0.03 | .822 |
| Domain 2b: Communication about goals of care: with patients and families | 6.54 (2.02) | 7.78 (1.38) | 0.72 | <.001 | 8.02 (1.42) | 8.10 (1.29) | 0.06 | .439 |
| Domain 3: Patient- and family-centered decisionmaking | 6.85 (2.09) | 8.05 (1.39) | 0.68 | <.001 | 8.11 (1.33) | 8.35 (1.21) | 0.19 | .072 |
| Domain 4a: Continuity of care: with colleagues | 5.82 (2.40) | 6.96 (1.78) | 0.54 | <.001 | 8.04 (1.51) | 8.09 (1.39) | 0.03 | .636 |
| Domain 4b: Continuity of care: with caregivers | 6.20 (2.38) | 7.53 (1.58) | 0.66 | <.001 | 8.25 (1.35) | 8.17 (1.35) | 0.06 | .641 |
| Domain 5: Emotional and practical support for patients and families | 5.99 (2.36) | 7.43 (1.61) | 0.71 | <.001 | 8.43 (1.41) | 8.38 (1.22) | 0.04 | .696 |
| Domain 6: Spiritual support for patients and families | 4.91 (2.53) | 6.26 (2.14) | 0.58 | <.001 | 7.89 (1.71) | 7.47 (1.68) | 0.25 | .004 |
| Domain 7a: Emotional and organizational support to ICU clinicians; emotional | 4.33 (2.55) | 5.02 (2.47) | 0.28 | .009 | 5.95 (2.63) | 5.84 (2.48) | 0.04 | .517 |
| Domain 7b: Emotional and organizational support to ICU clinicians; educational | 4.63 (2.57) | 5.97 (2.15) | 0.57 | <.001 | 5.76 (2.53) | 6.49 (2.03) | 0.32 | .002 |

ICU, intensive care unit.

[a] *p* values based on robust regression analyses controlling for site; [b] *p* values compare nurses' ratings of physician care with physician ratings of physician care; [c] *p* values compare nurses' ratings of nurse care with physician ratings of nurse care.

**Table 5.** Attending and housestaff ratings of physician care

| | Attendings' Ratings (n = 83) | Housestaff's Ratings (n = 104) | Effect Size: Cohen's *d* | $p^a$ |
|---|---|---|---|---|
| Domain 1: Symptom management and comfort care | 8.14 (1.33) | 8.48 (1.22) | 0.27 | .020 |
| Domain 2a: Communication about goals of care: within the team | 7.72 (1.34) | 7.99 (1.33) | 0.20 | .225 |
| Domain 2b: Communication about goals of care: with patients and families | 7.53 (1.55) | 7.99 (1.21) | 0.33 | .036 |
| Domain 3: Patient- and family-centered decisionmaking | 7.66 (1.60) | 8.38 (1.10) | 0.52 | .001 |
| Domain 4a: Continuity of care: with colleagues | 6.65 (1.90) | 7.21 (1.64) | 0.32 | .189 |
| Domain 4b: Continuity of care: with caregivers | 7.12 (1.85) | 7.83 (1.26) | 0.45 | .017 |
| Domain 5: Emotional and practical support for patients and families | 7.22 (1.75) | 7.62 (1.46) | 0.25 | .030 |
| Domain 6: Spiritual support for patients and families | 6.05 (2.23) | 6.45 (2.06) | 0.19 | .184 |
| Domain 7a: Emotional and organizational support to ICU clinicians; emotional | 4.60 (2.53) | 5.34 (2.37) | 0.30 | .043 |
| Domain 7b: Emotional and organizational support to ICU clinicians; educational | 5.34 (2.25) | 6.47 (1.95) | 0.54 | .005 |

ICU, intensive care unit.

[a] *p* values based on robust regression analyses controlling for site.

of the ten overall rating items assessing seven domains central to the delivery of palliative care; and 2) to use these ten overall rating items to assess the quality of palliative care delivered in the ICU as rated by clinicians working in the ICU. In our analyses of item measurement characteristics, we found the rating items met most of the criteria that support the appropriateness definition associated with content validity: few missing responses, little skew, and minimal floor effects. The one criteria that was unmet was the percent of ceiling scores. Seventy percent of items (14 of 20) had ceiling scores >5% and 45% of items (nine of 20) had ceiling scores >10%. Although ceiling scores limit the items' ability to demonstrate additional quality improvement, they are unlikely to undermine the appropriateness of the items to provide a measure of the current quality of palliative care.

In our analyses comparing aspects of palliative care with the domain of symptom management, we found opportunities for improvement. All domains except one were rated as significantly lower than the domain of symptom management. We noted that three domains in particular received relatively lower ratings: the provision of education about palliative care to clinicians, the assessment of spiritual and religious needs of the patient and family, and the provision of emotional support for clinicians caring for dying patients.

Previous research has also supported a need for improvement in these domains. The low rating for ICU clinician education in palliative care is consistent with the statement of the fifth International Consensus Conference in Critical Care, which noted a lack of training in end-of-life care for ICU clinicians (31). Spiritual support is an important and underachieved aspect of comprehensive care in the ICU, and the assessment of spiritual and religious needs of patients and families are important first steps in being able to provide spiritual support (32, 33). Additionally, spiritual and religious needs assessments of patients and families are important because family satisfaction with spiritual care is an important predictor of family satisfaction with their overall ICU care (32). The low ratings in the domain of emotional support for clinicians are concerning because caring for dying patients is a strong risk factor for burnout (34), and poor support may lead to higher levels of burnout. Addressing emotional support for ICU clinicians may be an important step in ensuring an adequate critical care workforce in the future (24, 35). Ratings of this domain are especially meaningful because clinicians are in the best position to evaluate it as opposed to other domains that might be better evaluated by patients or families (36).

We also found that palliative care delivered by nurses as rated by nurses was significantly higher than physician care rated by physicians. These higher ratings for nurses may be the result of the fact that ICU nurses are the clinicians that spend the most time at the bedside. They therefore play important roles supporting patients and families in the domains identified here (37–39). Higher ratings for nurses are supported by surveys of clinician barriers to high-quality palliative in the ICU documenting that physicians experience more barriers than nurses, especially in the areas of clinician training in communication and palliative care (40).

Interestingly, nurse delivery of palliative care was rated similarly regardless of rater, but physician delivery of palliative care was rated significantly differently depending on rater. Physicians consistently rated physician care higher than did nurses rating physician care. This discrepancy between raters for physician care suggests the need for improved communication among clinicians providing palliative care in the ICU (41, 42). Several studies suggest that current interdisciplinary collaboration about end-of-life care in the ICU is variable and often poor. For example, a study from France showed that collaboration about end-of-life decisionmaking between physicians and nurses occurred only 27% of the time as reported by nurses and 50% as reported by physicians (43). A more recent study from Europe found that physicians reported that nurses were involved in end-of-life decisions in three-fourths of cases involving withholding or withdrawing life support, but there was significant variability between northern and southern Europe (44). A transcontinental study of physicians found wide regional variability in the proportion of decisions about end-of-life care in the ICU in which physicians reported involving nurses with the United States reporting the lowest proportion of all countries studied (33). Furthermore, most of the interventions that have resulted in improvements of end-of-life care in the ICU have involved interdisciplinary teams in the interventions (4–7). Interventions that facilitate and support communication and collaboration within the context of an interdisciplinary approach may result in more concordant evaluations of, and improvements in, ICU palliative care.

In our analysis comparing housestaff and attending ratings, we found that housestaff rated one item significantly higher (at our stringent *p* value of.001): patient- and family-centered decision-making. In addition, there were trends for higher ratings by housestaff on six other items. These findings are in contrast to an earlier study that showed that housestaff rated the quality of dying for patients in the ICU significantly lower than attending physicians (19). It is difficult to reconcile these findings. It may be that housestaff are exposed to more training about communication and emotional support and perceive these components of care as better than attendings while rating the overall dying experience as worse. Further study is needed to understand these differences.

A unique component of this study is the use of clinician ratings. Clinician ratings are not only more easily accessible than those of patients and families, but, because clinicians take care of critically ill patients on a daily basis, they may be able to use their previous experiences to gauge the current delivery of palliative care. Because differences in ratings identify differences in perceptions of quality of palliative care, these ratings may also be useful to help target improvements in care that could help improve shared perceptions and mitigate conflict among ICU clinicians and between disciplines. This is important because prior research has shown that conflict among clinicians in the ICU about end-of-life care is common and harmful to patient care and clinician well-being (34, 45–47). In addition, research from outside the ICU setting suggests that improved interdisciplinary collaboration has a high likelihood of improving quality of palliative care (48–50). Finally, clinicians' ratings may lead to interventions that are more likely to succeed in improving care because they are directed to resolving problems that are recognized and endorsed by clinicians.

This study has a number of limitations. First, the participating sites and the ICU clinicians who completed questionnaires volunteered for this study and therefore constituted a convenience sample that may not be representative of all ICU clinicians or hospital sites. We were unable to determine the denominator of eligible clinicians and therefore cannot calculate an accurate response rate. Therefore, our ability to generalize these findings broadly is limited. However, because we obtained responses from an interdisciplinary sample of nearly 500 ICU clinicians representing 13 institutions with diverse characteristics across the country, this study provides insight into the specific centers sampled and the items used to rate quality of palliative care. Second, in an effort to ensure anonymity in this initial use of these items, we collected very little demographic or professional characteristics about the clinicians surveyed and cannot assess whether these characteristics are associated with ratings of palliative care. Third, our findings are drawn from a novel set of items that needs to be studied further to understand its psychometric properties, including reliability, validity, and responsiveness. Our data provide a first step in that process and our findings should be considered as exploratory. Finally, our approach of using symptom management as the "standard" is supported by some literature (2, 25–27) but is also somewhat arbitrary and other standards could have been used.

In summary, our study suggests that, as perceived by the ICU clinicians, there are domains in which ICU palliative care needs targeted improvement, including spiritual support for families, emotional support for clinicians, and clinician education about palliative care in the ICU. Furthermore, there are significant differences between how nurses and physicians rate each others' palliative care skills in the ICU with physicians' care being rated more poorly than nurses' care in this area. Our findings also support the importance of interdisciplinary communication and collaboration as an avenue to improve palliative care in the ICU. Finally, this study provides preliminary evidence supporting further evaluation of survey items assessing the quality of palliative care in the ICU as rated by physicians and nurses in that ICU.

## REFERENCES

1. Angus DC, Barnato AE, Linde-Zwirble WT, et al: Use of intensive care at the end of life in the United States: An epidemiologic study. *Crit Care Med* 2004; 32:638–643
2. Truog RD, Campbell ML, Curtis JR, et al: Recommendations for end-of-life care in the intensive care unit: A consensus statement by the American Academy of Critical Care Medicine. *Crit Care Med* 2008; 36:953–963
3. Lanken PN, Terry PB, Delisser HM, et al: An official American Thoracic Society clinical policy statement: palliative care for patients with respiratory diseases and critical illnesses. *Am J Respir Crit Care Med* 2008; 177:912–927
4. Campbell ML, Guzman JA: Impact of a proactive approach to improve end-of-life care in a medical ICU. *Chest* 2003; 123:266–271
5. Curtis JR, Treece PD, Nielsen EL, et al: Integrating palliative and critical care: Evaluation of a quality improvement intervention. *Am J Respir Crit Care Med* 2008; 178: 269–275
6. Lautrette A, Darmon M, Megarbane B, et al: A communication strategy and brochure for relatives of patients dying in the ICU. *N Engl J Med* 2007; 356:469–478
7. Norton SA, Hogan LA, Holloway RG, et al: Proactive palliative care in the medical intensive care unit: effects on length of stay for selected high-risk patients. *Crit Care Med* 2007; 35:1530–1535
8. Curtis JR, Engelberg RA: Measuring success of interventions to improve the quality of end-of-life care in the intensive care unit. *Crit Care Med* 2006; 34(Suppl):S341–S347
9. Clarke EB, Curtis JR, Luce JM, et al: Quality indicators for end-of-life care in the intensive care unit. *Crit Care Med* 2003; 31:2255–2262
10. Mularski RA, Curtis JR, Billings JA, et al: Proposed quality measures for palliative care in the critically ill: A consensus from the Robert Wood Johnson Foundation Critical Care Workgroup. *Crit Care Med* 2006; 34(Suppl):S404–S411
11. Nelson JE, Meier D, Oei EJ, et al: Self-reported symptom experience of critically ill cancer patients receiving intensive care. *Crit Care Med* 2001; 29:277–282
12. Radwany S, Albanese T, Clough L, et al: End-of-life decision making and emotional burden: placing family meetings in context. *Am J Hosp Palliat Care* 2009; 26:376–383
13. Lynn J, Teno L, Phillips R: Perception of family members of the dying experience of older and serious ill patients. *Ann Intern Med* 1997; 126:97–106
14. Gerstel E, Engelberg RA, Koepsell T, et al: Duration of withdrawal of life support in the intensive care unit and association with family satisfaction. *Am J Respir Crit Care Med* 2008; 178:798–804
15. Whipple JK, Lewis KS, Quebbeman EJ, et al: Analysis of pain management in critically ill patients. *Pharmacotherapy* 1995; 15: 592–599
16. Addington-Hall J, McPherson C: After-death interviews with surrogates/bereaved family members: Some issues of validity. *J Pain Symptom Manage* 2001; 22:784–790
17. Kross EK, Engelberg RA, Shannon SE, et al: Potential for response bias in family surveys about end-of-life care in the ICU. *Chest* 2009; 136:1496–1502
18. Heyland DK, Rocker GM, Dodek PM, et al: Family satisfaction with care in the intensive care unit: Results of a multiple center study. *Crit Care Med* 2002; 30:1413–1418
19. Levy CR, Ely EW, Payne K, et al: Quality of dying and death in two medical ICUs: Perceptions of family and clinicians. *Chest* 2005; 127:1775–1783
20. Kirchhoff KT, Anumandla PR, Foth KT, et al: Documentation on withdrawal of life support in adult patients in the intensive care unit. *Am J Crit Care* 2004; 13:328–334
21. Nelson JE, Mulkerin CM, Adams LL, et al: Improving comfort and communication in the ICU: A practical new tool for palliative care performance measurement and feedback. *Qual Saf Health Care* 2006; 15:264–271
22. Hodde NM, Engelberg RA, Treece PD, et al: Factors associated with nurse assessment of the quality of dying and death in the intensive care unit. *Crit Care Med* 2004; 32: 1648–1653
23. Shannon SE, Mitchell PH, Cain K: Patients, nurses and physician have different views of quality of critical care. *J Nurs Scholarsh* 2002; 34:173–179
24. Hamric AB, Blackhall LJ: Nurse–physician perspectives on the care of dying patients in intensive care units: Collaboration, moral distress, and ethical climate. *Crit Care Med* 2007; 35:422–429
25. Mularski RA, Puntillo K, Varkey B, et al: Pain management within the palliative and end-of-life care experience in the ICU. *Chest* 2009; 135:1360–1369
26. Mularski RA: Pain management in the intensive care unit. *Crit Care Clin* 2004; 20: 381–401, viii
27. Steinhauser KE, Christakis NA, Clipp EC, et al: Factors considered important at the end of life by patients, family, physicians, and other care providers. *JAMA* 2000; 284: 2476–2482
28. Perrin EB, Aronson NK, Alonso J, et al: Instrument review criteria. *Medical Outcomes Trust Bulletin* 1995; 3:I–IV
29. Stewart AL, Ware JE: Measuring Functioning and Well-Being: The Medical Outcomes Study Approach 1992. Durham: Duke University Press, 1992
30. Cohen J: Statistical Power Analyses for the Behavioral Sciences. Second Edition. Hillsdale, NJ, Erlbaum, 1988
31. Carlet J, Thijs LG, Antonelli M, et al: Challenges in end-of-life care in the ICU. Statement of the 5th International Consensus Conference in Critical Care: Brussels, Belgium, April 2003. *Intensive Care Med* 2004; 30:770–784
32. Wall RJ, Engelberg RA, Gries CJ, et al: Spiritual care of families in the intensive care unit. *Crit Care Med* 2007; 35:1084–1090
33. Yaguchi A, Truog RD, Curtis JR, et al: International differences in end-of-life attitudes in the intensive care unit: Results of a survey. *Arch Intern Med* 2005; 165:1970–1975
34. Poncet MC, Toullic P, Papazian L, et al: Burnout syndrome in critical care nursing staff. *Am J Respir Crit Care Med* 2007; 175: 698–704
35. Curtis JR, Puntillo K: Is there an epidemic of burnout and post-traumatic stress in critical care clinicians? *Am J Respir Crit Care Med* 2007; 175:634–636
36. Espinosa L, Young A, Symes L, et al: ICU nurses' experiences in providing terminal care. *Crit Care Nurs Q* 2010; 33:273–281
37. Kirchhoff KT, Conradt KL, Anumandla PR: ICU nurses' preparation of families for death of patients following withdrawal of ventilator support. *Appl Nurs Res* 2003; 16:85–92
38. Jamerson PA, Scheibmeir M, Bott MJ, et al: The experiences of families with a relative in the intensive care unit. *Heart Lung* 1996; 25:467–474
39. McClement SE, Desgner LF: Expert nursing behaviors in care of the dying adult in the intensive care unit. *Heart Lung* 1995; 24: 408–419
40. Nelson JE, Angus DC, Weissfeld LA, et al: End-of-life care for the critically ill: A national intensive care unit survey. *Crit Care Med* 2006; 34:2547–2553
41. Curtis JR, Shannon SE: Transcending the silos: toward an interdisciplinary approach to end-of-life care in the ICU. *Intensive Care Med* 2006; 32:15–17
42. O'Mahony S, McHenry J, Blank AE, et al: Preliminary report of the integration of a palliative care team into an intensive care unit. *Palliat Med* 2009; 24:154–165
43. Ferrand E, Lemaire F, Regnier B, et al: Discrepancies between perceptions by physicians and nursing staff of intensive care unit end-of-life decisions. *Am J Respir Crit Care Med* 2003; 167:1310–1315
44. Benbenishty J, Ganz FD, Lippert A, et al: Nurse involvement in end-of-life decision making: The ETHICUS study. *Intensive Care Med* 2006; 32:129–132
45. Studdert DM, Mello MM, Burns JP, et al: Conflict in the care of patients with prolonged stay in the ICU: Types, sources, and predictors. *Intensive Care Med* 2003; 29: 1489–1497
46. Azoulay E, Timsit JF, Sprung CL, et al: Prevalence and factors of intensive care unit con-

flicts: the Conflicus study. *Am J Respir Crit Care Med* 2009; 180:853–860

47. Embriaco N, Azoulay E, Barrau K, et al: High level of burnout in intensivists: Prevalence and associated factors. *Am J Respir Crit Care Med* 2007; 175:686–692
48. Reinke LF, Shannon SE, Engelberg R, et al: Nurses' identification of important yet under-utilized end-of-life care skills for patients with life-limiting or terminal illnesses. *J Palliat Med* 2010; 13:753–759
49. Reinke LF, Shannon SE, Engelberg RA, et al: Supporting hope and prognostic information: Nurses' perspectives on their role when patients have life-limiting prognoses. *J Pain Symptom Manag* 2010; 39:982–992
50. Cohen-Mansfield J, Lipson S, Horton D: Medical decision-making in the nursing home: A comparison of physician and nurse perspectives. *J Gerontol Nurs* 2006; 32:14–21