Outcomes Associated With a Nurse-Driven **Palliative Care Screening Tool** in the Intensive Care Unit

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Background Access to specialty palliative care delivery in the intensive care unit is inconsistent across institutions. The intensive care unit at the study institution uses a screening tool to identify patients likely to benefit from specialty palliative care, yet little is known about outcomes associated with the use of screening tools.
Objective To identify outcomes associated with specialty palliative care referral among patients with critical illness.
Methods Records of 112 patients with positive results on palliative care screening were retrospectively reviewed to compare outcomes between patients who received a specialty palliative care consult and those who did not. Primary outcome measures were length of stay, discharge disposition, and escalation of care.
Results Sixty-five patients (58%) did not receive a palliative care consult. No significant differences were found in length of hospital or intensive care unit stay. Most patients who experienced mechanical ventilation did not receive a palliative care consultation ($\chi^2 = 5.14$, $P = .02$). Patients who were discharged to home were also less likely to receive a consult ($\chi^2 = 4.1$, $P = .04$), whereas patients who were discharged to hospice were more likely to receive a consult ($\chi^2 = 19.39$, $P < .001$).
Conclusions Unmet needs exist for specialty palliative care. Understanding the methods of identifying patients for specialty palliative care and providing them with such care is critically important. Future research is needed to elucidate the factors providers use in their decisions to order or defer specialty palliative care consultation. (*Critical Care Nurse*. 2020;40[3]:23-30)

Patients with critical illness face serious burdens that impose physical and emotional suffering and may require support after intensive care unit (ICU) discharge.[1] Palliative care is aimed at relieving suffering in all stages of disease and does not necessarily equate to end-of-life care. The benefits of palliative care in patients not receiving critical care are well documented.[2] However, in the critical care environment, palliative care delivery is inconsistent because of process variation across ICU settings.[3] One of the variations in care delivery is late specialty consultation for palliative care.

To increase the use of palliative care consultation, our ICU uses a palliative care screening tool. Although screening tools such as ours are increasingly prevalent in the critical care environment,[4] research and knowledge about outcomes associated with the use of these tools are lacking. The purpose of this study

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was to identify outcomes associated with specialty palliative care referral among patients with critical illness who had a positive result on the screening tool and received a palliative care consult, as compared with patients who had a positive screening result but did not receive a referral for specialty palliative care. The specific aims were to (1) compare length of stay and discharge disposition among patients who were candidates for palliative care and did or did not receive a palliative care consultation and (2) compare measures of intensity of care (mechanical ventilation, vasopressor infusion, dialysis, and code status) among patients who were candidates for palliative care and did or did not receive a palliative care consultation.

Specialty palliative care is an interdisciplinary medical specialty focused on supporting the best possible quality of life for patients with critical illness and for their family members.[5] Objectives of palliative care include managing symptoms and establishing goals of care consistent with patients' values and preferences. Ideally, specialty palliative care entails an ongoing conversation involving the physical, spiritual, emotional, and psychosocial realms in addition to practical aspects of care coordination and symptom management.[5] Primary palliative care, on the other hand, is palliative care delivered by clinicians who are not palliative care specialists. For example, in the ICU the entire care team, including internal medicine physicians, nurse practitioners, intensivist physicians, nurses, chaplains, and social workers, may provide basic palliative care.[6] A combination of primary palliative care and specialty palliative care is recommended for patients with critical illness who have complex physical, emotional, spiritual, and psychosocial needs.[7]

Nurses note whether the screening result was positive or negative and also report the raw score during rounds.

Recognizing patients who would benefit from specialty palliative care is complex.[8] In a recent survey, critical care nurses and physicians agreed that specialty palliative care is underutilized.[3] However, the survey showed little consensus on factors that should be used to identify patients for specialty palliative care consultation.[3]

To identify patients who would benefit from this level of care, a critical care clinical nurse specialist and a palliative care coordinator at our institution (R.B. and A.S.) developed the screening tool shown in the Figure. The screening tool is based on the guidelines set forth by the IPAL-ICU (Improving Palliative Care in the ICU) Project, a collaboration developed by the Center to Advance Palliative Care.[9,10] A positive screening result, indicating that the patient would likely benefit from specialty palliative care consultation, is a score of 4 or greater.

The tool was deployed at our facility in the electronic health record (EHR), and critical care nurses entered the information during each day shift on weekdays (Monday through Friday). Nurses notified the intensivist physician and other team members of the result during multidisciplinary rounds, and the physician had the option to place a specialty palliative care consult.

Methods

Design

In this retrospective cohort study, we reviewed EHRs to gather data from patients with positive results on the nurse-driven palliative care screening tool (Figure). All patients admitted to the ICU and present in the ICU on any weekday (Monday through Friday) were screened daily. The institutional review board at our hospital approved the study.

Study Cohort

Eligible patients were adults admitted to the 14-bed medical-surgical ICU of a community health system in Idaho between September 2017 and March 2018. We included patients with positive screening results on the nurse-driven palliative care screening tool. We excluded patients with stays shorter than 24 hours because of inadequate time for palliative care consultation.

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ICU Palliative Care Screening Tool
(Not a permanent part of the medical record)
If current palliative care plan in place, screening is no longer required, but please address PC status in rounds.

Criteria: Please consider the following criteria when determining if the patient or family could benefit from a palliative care plan

1. Basic disease process	*SCORE*
a. Cancer (metastatic/recurrent)	
b. Advanced COPD	*Score 1 point EACH*
c. Stroke (with decreased function by at least 50%)	
d. End-stage disease	
e. Advanced cardiac disease (eg, CHF, severe CAD, CM [LVEF <25%])	_____
f. Advanced dementia	
g. S/P arrest >2 days without return of neurological function (excludes therapeutic hypothermia patients)	
h. Other life-limiting illness (debility, adult failure to thrive)	
2. Other criteria to consider in screening	
a. Concomitant disease process or condition complicating care	
b. Readmission for the same diagnosis in last 30 days	
c. ICU length of stay (>3 days) without evidence of progress	
d. Resides in skilled nursing facility or is bed bound	*Score 1 point EACH*
e. Has AND or limited code status established or requested	
f. Transfer to ICU after 3 hospital days	_____
g. Patient and/or family member needs or requests help with complex decision-making	
h. Pain and/or other symptoms not resolved by current treatment plan	
i. Enteral feeding in place or considering enteral feeding tube or tracheotomy	
j. Social, emotional, and/or spiritual isolation	

Referral guidelines:
TOTAL SCORE = 2 no intervention needed (chart N-not recommended)
TOTAL SCORE = 3 observation only (chart N-not recommended)
TOTAL SCORE = 4 (chart Y- Yes intervention recommended):
- Physician on case will discuss with patient/family
- Palliative care consult (requires physician order)
- MSW referral

If 2 g and/or 2 h are selected but patient does not meet other criteria, consider social services, care management, or pastoral care referral.

Figure Palliative care screening tool for the intensive care unit.

Abbreviations: AND, allow natural death; CAD, coronary artery disease; CHF, congestive heart failure; CM, cardiomyopathy; COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; LVEF, left ventricular ejection fraction; MSW, Master of Social Work; PC, palliative care; S/P, status post.

Nurse-Driven Palliative Care Screening Tool

A team at our hospital developed the nurse-driven palliative care screening tool to increase palliative care consultation use in the ICU. This screening tool includes disease process information, indirect markers of functional status (such as the use of a feeding tube), patient and family requests for help with decision-making, and the presence of unrelieved pain or other symptoms. Nurses complete the form each weekday and then communicate the score to the interdisciplinary team during rounds (rounds are not held on weekend days). Patients must be screened daily because responses can change with changes in health status or longer stays. For example, an ICU stay of greater than 3 days without evidence of progress adds 1 point to the score. A score of 4 or greater is considered positive, meaning that the patient would likely benefit from palliative care. Nurses note whether the screening result was positive or negative and also report the raw score during rounds. Physicians then choose whether to order a specialty palliative care consult. The specialty palliative care consultation team includes a physician, a nurse practitioner, and a social worker.

Measures

We compared outcomes of patients with positive screening results who received a specialty palliative care consult with outcomes of patients with positive screening results who did not receive a referral for a palliative care consult.

Table 1 Demographic characteristics and outcomes of study participants

Characteristic	Total (N=112)	Received specialty palliative care consult (n=47)	Did not receive specialty palliative care consult (n=65)	Statistical analysis
Age, y, mean (SD)	72 (14)	73 (11)	71 (16)	$t_{109}=0.45$, $P=.66$
Female sex, No. (%)	47 (42)	33 (70)	14 (21)	$\chi^2_1=4.93$, $P=.03$[a]
White, No. (%)	105 (94)	44 (94)	61 (94)	NA
Advance directive present on admission, No. (%)	48 (43)	28 (60)	20 (31)	$\chi^2_1=6.3$, $P=.008$[a]
Primary diagnosis, No. (%)				
Cancer	12 (11)	9 (19)	3 (5)	
Cerebrovascular accident	3 (3)	0 (0)	3 (5)	
COPD	7 (6)	2 (4)	5 (8)	
Heart failure	8 (7)	2 (4)	6 (9)	
Hip fracture	1 (1)	1 (2)	0 (0)	
Kidney disease	6 (5)	2 (4)	4 (6)	NA
Other	13 (12)	6 (13)	7 (11)	
Cardiac (other than heart failure)	11 (10)	7 (15)	4 (6)	
Neurological (other than cerebrovascular accident)	6 (5)	0 (0)	6 (9)	
Pulmonary (other than COPD)	8 (7)	5 (11)	3 (5)	
Pneumonia	12 (11)	5 (11)	7 (11)	
Sepsis	25 (22)	8 (17)	17 (26)	
Days in the ICU, mean (SD), range	6.3 (5.3), 0.5-624	6 (5)	6.5 (5.5)	$t_{110}=1.02$, $P=.66$
Days in the hospital, mean (SD), range	10.7 (8.3), 1.1-62	11.6 (9.6)	10 (7.1)	$t_{110}=0.97$, $P=.34$
Received mechanical ventilation, No. (%)	41 (37)	11 (23)	30 (46)	$\chi^2_1=5.14$, $P=.02$[a]
Received vasopressor infusion, No. (%)	37 (33)	11 (23)	26 (40)	$\chi^2_1=2.69$, $P=.10$
Received dialysis, No. (%)	9 (8)	3 (6)	6 (9)	NA

Abbreviations: COPD, chronic obstructive pulmonary disease; ICU, intensive care unit; NA, insufficient numbers for analysis.

[a] Fisher exact test.

The primary outcome measures were length of ICU stay, length of hospital stay, and discharge disposition. Additional outcomes related to escalation of care included the presence of invasive (endotracheal or tracheal) mechanical ventilation, vasopressor infusion, and dialysis. We collected information about the presence or absence of advance directives at admission and data pertaining to diagnosis. For patients who received a palliative care consult, we recorded whether the consult was accepted by the patient and family members and also the time elapsed between the positive screening result and subsequent palliative care consultation. We also collected data about changes in code status after palliative care consultation.

Statistical Analysis

We analyzed the data with SAS statistical software, version 9.3 (SAS Institute Inc) and R, version 3.3.4 (R Foundation for Statistical Computing). We used descriptive statistics to summarize the patient characteristics and outcomes. We analyzed group differences between patients who received a palliative care consult and those who did not with *t* tests for continuous variables and χ^2 tests for categorical variables.

Results

Participants

Characteristics of the study participants are presented in Table 1. The 112 participants were primarily white,

Table 2 Discharge characteristics of study participants[a]

Characteristic	Total (N = 112)	Received specialty palliative care consult (n = 47)	Did not receive specialty palliative care consult (n = 65)	Statistical analysis
Discharge to institution/nonhospice (vs all other categories)	34 (30)	10 (21)	24 (37)	$\chi^2_1 = 2.46$ $P = .08$
Discharge to home/nonhospice (vs all other categories)	19 (17)	4 (9)	15 (23)	$\chi^2_1 = 4.1$ $P = .04$[b]
Discharge to hospice (vs all other categories)	18 (16)	16 (34)	2 (3)	$\chi^2_1 = 19.39$ $P < .001$
Deceased (vs all other categories)	41 (37)	17 (36)	24 (37)	$\chi^2_1 = 0.007$ $P = .93$

[a] Values indicate number (percentage).

with a mean age of 72 years (range, 18-90 years). The mean length of hospitalization was 10.7 days (range, 1.1-62 days), and the mean ICU stay was 6.3 days (range, 0.5-624 days). Less than half of the patients had an advance directive on file at hospital admission.

Group Differences

Differences in characteristics and outcomes between patients with positive screening results who did and did not receive a palliative care consult are presented in Tables 1 and 2. Forty-seven of the 112 patients in our study population (42%) did not receive a palliative care consultation. Age was not significantly different between the groups of patients who did and did not receive a palliative care consult, but women were more likely than men to receive a palliative care consult. We found no significant differences between groups in the length of hospital or ICU stay. Most patients who received mechanical ventilation did not receive a palliative care consult. We found no statistically significant difference in palliative care referral among patients who received vasopressors. Statistical analysis was not possible for patients who received dialysis because this subset included only 9 patients (Table 1).

The most common primary diagnosis was sepsis, followed by "other," pneumonia, and cancer. We were unable to conduct statistical analysis to identify group differences in diagnosis because of the small number of patients in each diagnosis category.

Discharge disposition differed between patients who received a palliative care consult and those who did not (Tables 1 and 2). Specifically, patients who received a consult were more likely to be discharged to home hospice than were patients who did not receive a consult. Patients who did not receive a palliative care consult were more likely than those who received a consult to be discharged home without hospice. Thirty-four of the 112 patients (30%) were discharged to a nonhospice institution (skilled nursing/rehabilitation or long-term acute care). Only 10 of these patients (29%) received a specialty palliative care consult, as compared with 24 patients (71%) who did not receive a consult, although this result did not reach statistical significance at $\alpha = .05$ (Table 2).

All 47 of the patients and/or families who received a palliative care consult referral elected to accept the consultation and ongoing treatment by the palliative care team. The mean time from receiving a positive score on the palliative care screening tool to receiving a palliative care consult was 1.1 days (SD, 1.7 days; range, <1 to 7 days).

Patients who had an advance directive in place at hospital admission were more likely to receive a specialty palliative care consult than to not receive a consult. Thirty-four of 112 patients (30%) had full resuscitation code status throughout the entire hospital stay. Seventy-seven patients (69%) had a do-not-resuscitate (DNR) order in place, and 2 patients (2%) had a modified DNR order. Of the 47 patients who received a palliative care consult, 13 had full resuscitation code status and 34 had a DNR order in place before the consult. After the palliative care consult, 1 patient remained at full resuscitation code status and 43 patients had a DNR order; data pertaining to code status after the consult were missing for 3 patients.

Patients who received invasive mechanical ventilation were less likely to receive a specialty palliative care consult.

Discussion

Most critical care clinicians, including physicians and nurses, believe that specialty palliative care is underutilized in the critical care environment.[3] However, disagreement exists about the role of critical care nurses in decision-making regarding specialty palliative care referral.[3] The nurse-driven screening tool we developed represents a unique way of integrating nurses and physicians in a collaborative decision-making approach in which nurses collect data about palliative care needs and then review that information with physicians during patient rounds.

Unexpectedly, even with the nurse-driven palliative care screening tool in place, only 42% of the patients who were deemed eligible for specialty palliative care received a consult. This result was particularly concerning given that 24 patients who had positive screening results and did not receive a specialty palliative care consult were discharged to an institution (skilled nursing/rehabilitation or long-term acute care), an outcome that prior studies have shown is inconsistent with some patients' wishes.[11] Accordingly, providers skilled in advance care planning (eg, specialty palliative care providers) should conduct thoughtful conversations with patients about goals of care. Although all clinicians participate in discussions about symptom management and goals of care, palliative care specialists are helpful for managing refractive symptoms or significant decision-making conflicts.[7,12] Providing palliative care in these situations is also time-consuming, and studies show that busy workloads constrain intensivists.[13]

Given the existing shortage of providers, treating physicians must also be trained to have goals-of-care conversations.

Our criteria for identifying patients who would likely benefit most from specialty palliative care consultation relied on the guidelines from the IPAL-ICU project and included information not readily available in the EHR, therefore requiring nurses' assessments of factors such as spiritual distress.[10] Henderson and colleagues[14] took an alternative approach by using the Rothman Index (a real-time measure of patient condition that uses data readily available in the EHR) combined with length of stay as a trigger for palliative care consultation for patients in medical intensive care and step-down units. Minimizing the time clinicians spend entering information into a trigger tool is a worthy goal because increased time spent on documentation is associated with clinician dissatisfaction and burnout.[15] However, recognizing some factors that indicate a need for specialty palliative care, such as spiritual distress,[16] is not currently possible using routinely produced EHR data.

In our study population, the majority of patients who received mechanical ventilation did not receive a palliative care consult. This finding is troubling given that patients receiving mechanical ventilation have high severity of illness and a high symptom burden.[17] It is possible that patients who were not able to speak or receiving sedating medications commonly used in mechanical ventilation were less likely to receive a consult because of difficulty in communication or decision-making. However, current palliative care guidelines explicitly state that communication or decision-making difficulties are unacceptable criteria for withholding or delaying specialty palliative care.[16] Moreover, patients receiving intensive treatment with a high symptom burden (such as mechanical ventilation) and their families may benefit most from specialty palliative care.[16]

We did not find a difference in length of hospitalization or length of ICU stay between patients who received a palliative care consult and those who did not. This finding should be treated with caution because we were not able to rule out systematic differences between the 2 groups that may have influenced the length of stay. Although the results of individual studies vary widely and some studies have negative findings, a recent systematic review identified a pattern of decreased length of stay among patients with critical illness who received palliative care.[18] Our study also failed to find differences in receiving or not receiving palliative care consult referrals in patients being treated with vasopressors or dialysis, but the small numbers of patients receiving vasopressors or dialysis limited our ability to detect differences.

In a national study, 14% of patients admitted to ICUs met 1 or more primary criteria for specialized palliative care consultation.[19] Given the existing shortage of providers, treating physicians must also be trained to have goals-of-care conversations. Conversations about procedures, such as decisions about whether to insert an endotracheal tube or a feeding tube, often supplant critical discussions about goals and values. Clinicians are sometimes underprepared and undertrained to conduct high-quality goals-of-care conversations, or they simply may not have time.[19] Community-based outreach programs

that encourage people to document their wishes before hospitalization may be one way to address this issue.[20]

Limitations

We conducted this study in a single medical ICU at 1 nonprofit hospital. The nurse-driven palliative care screening tool provided information to physicians, but ultimately physicians decided whether or not to order a specialty palliative care consult. Therefore, selection bias likely exists in our data. For example, patient outcomes might have been influenced by a combination of effects of specialty palliative care consultation, and physicians might have used unique patient factors in their decision-making processes. Although mortality and length of stay were similar between patients who received a palliative care consult and those who did not, the 2 groups might have been systematically different in terms of illness severity or another unmeasured domain.

The small sample size also limited our study. We powered the study to detect differences in length of stay, but the small numbers of patients receiving vasopressors or dialysis limited our ability to detect differences. Although we collected data pertaining to primary diagnosis, we were not able to consistently collect data on comorbid conditions because of time constraints during medical record review.

Conclusions

The results from our study show that unmet needs exist for specialty palliative care. Understanding the methods of identifying patients and providing them with high-quality conversations about palliative care is critically important. Although our primary objective was to compare the outcomes of patients with positive results on the nurse-driven palliative care screening tool who received or did not receive a palliative care consult, we unexpectedly uncovered a troubling finding. Among the 112 patients with positive screening results, less than half actually received specialty palliative care consultation. Moreover, most patients who experienced mechanical ventilation, an escalation in care with a high symptom burden, did not receive a specialty palliative care consult. Future research is needed to elucidate the factors providers use in their decisions to order or defer specialty palliative care consultation. CCN

Financial Disclosures
None reported.

See also

To learn more about palliative care, read "Clinical Nurse Specialists Fostering Palliative Care Skills" by Price and Kocan in *AACN Advanced Critical Care,* 2018;29(1):84-90. Available at **www.aacnacconline.org.**

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- The authors reviewed electronic health records to gather data from 112 patients with positive results on the nurse-driven palliative care screening tool (developed at the authors' hospital).
- The screening tool includes disease process information, indirect markers of functional status (such as the use of a feeding tube), patient and family requests for help with decision-making, and the presence of unrelieved pain or other symptoms.
- The authors compared outcomes of patients with positive screening results who received a specialty palliative care consult with outcomes of patients with positive screening results who did not receive a referral for a palliative care consult.
- Age was not significantly different between the groups of patients who did and did not receive a palliative care consult, but women were more likely than men to receive a palliative care consult. No significant differences between groups in the length of hospital or ICU stay were found.
- Patients who received a consult were more likely to be discharged to home hospice than were patients who did not receive a consult. Patients who did not receive a palliative care consult were more likely than those who received a consult to be discharged home without hospice.
- The screening tool represents a unique way of integrating nurses and physicians in a collaborative decision-making approach, in which nurses collect data about palliative care needs and then review that information with physicians during patient rounds.
- Unexpectedly, even with the nurse-driven palliative care screening tool in place, only 42% of the patients who were deemed eligible received a consult.
- Most patients who received mechanical ventilation did not receive a palliative care consult. This finding is troubling given that patients receiving mechanical ventilation have high severity of illness and a high symptom burden. Although patients who were not able to speak or receiving sedating medications were less likely to receive a consult, current palliative care guidelines explicitly state that communication or decision-making difficulties are unacceptable criteria for withholding specialty palliative care.
- The results from our study show that unmet needs exist for specialty palliative care. Understanding the methods of identifying patients and providing them with high-quality conversations about palliative care is critically important. CCN

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