



# CONCORDANCE OF NURSES AND PHYSICIANS ON WHETHER CRITICAL CARE PATIENTS ARE RECEIVING FUTILE TREATMENT

By Thanh H. Neville, MD, MSHS, Joshua F. Wiley, MA, Myrtle C. Yamamoto, RN, Mark Flitcraft, RN, MSN, Barbara Anderson, RN, BSN, CNML, J. Randall Curtis, MD, MPH, and Neil S. Wenger, MD, MPH

**CE** 1.0 Hour

### Notice to CE enrollees:

A closed-book, multiple-choice examination following this article tests your understanding of the following objectives:

1. Identify common reasons why nurses consider treatment for critically ill patients futile.
2. Describe the differences between physicians' and critical care nurses' perceptions of care that is considered futile.
3. Discuss possible explanations for the differences between nurses' and physicians' perceptions of whether or not a patient is receiving futile treatment.

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**Background** Nurses and physicians often describe critical care that is not expected to provide meaningful benefit to a patient as futile, and providing treatments perceived as futile is associated with moral distress.

**Objective** To explore concordance of physicians' and nurses' assessments of futile critical care.

**Methods** A focus group of clinicians developed a consensus definition of "futile" critical care. Daily for 3 months, critical care physicians and nurses in a health care system identified patients perceived to be receiving futile treatment. Assessments and patients' survival were compared between nurses and physicians.

**Results** Nurses and physicians made 6254 shared assessments on 1086 patients. Nurses and physicians assessed approximately the same number of patients as receiving futile treatment (110 for nurses vs 113 for physicians,  $P = .82$ ); however, concordance was low as to which patients were assessed as receiving futile treatment ( $\kappa = 0.46$ ). The 110 patients categorized by nurses as receiving futile treatment had lower 6-month mortality than did the 113 patients so assessed by physicians (68% vs 85%,  $P = .005$ ). Patients who were assessed as receiving futile treatment by both providers were more likely to die in the hospital than were patients assessed as receiving futile treatment by the nurse alone (76% vs 32%,  $P < .001$ ) or by the physician alone (76% vs 57%,  $P = .04$ ).

**Conclusions** Interprofessional concordance on provision of critical care perceived to be futile is low; however, joint predictions between physicians and nurses were most predictive of patients' outcomes, suggesting value in collaborative decision making. (*American Journal of Critical Care*. 2015;24:403-411)

Physicians and nurses who work in the intensive care unit (ICU) are frequently exposed to complex, and often somber, issues inherent to the care of severely ill patients. Decisions regarding life-sustaining treatment are common,<sup>1</sup> and with approximately 20% of Americans dying during or shortly after an ICU stay,<sup>2</sup> end-of-life care has become integral to critical care. Providing aggressive care to the sickest patients who are not expected to improve may result in providers perceiving that they are providing treatment that may be considered futile.<sup>3-8</sup> Although defining futile treatment has been difficult and controversial,<sup>9,10</sup> most physicians acknowledge it as a valid concept and believe that treatments that do not fulfill the goals of medicine should not be performed.<sup>11-13</sup>

## Nurses perceive more circumstances to be morally distressing than do physicians.

Researchers in several studies<sup>3,5,7</sup> have reported that, compared with physicians, nurses experience more moral distress when confronted with these circumstances. In 1 survey,<sup>3</sup> nurses not only perceived more circumstances to be morally distressing than physicians did, but nurses also gave lower ratings for the ethical ICU environment, quality of care, and level of team collaboration than physicians did. In a cross-sectional study<sup>7</sup> in European ICUs, researchers reported that nurses perceived approximately the same number of patients to be receiving inappropriate treatment as physicians perceived, but the nurses described more moral distress. Nurses also graded their workload as more burdensome when they provided treatment that they deemed inappropriate.<sup>7</sup> The authors attributed nurses' heightened level of distress to

lack of decision-making control. In the ICU, physicians generally make medical decisions and write orders, whereas nurses implement these plans of care. Nurses are often more intimately involved with patients and patients' families and may be more attuned to suffering on emotional, physical, and spiritual levels. They may be more aware of misaligned preferences of patients and patients' families because they spend more time at the bedside than any other provider.

Understanding differences between physicians' and nurses' assessments of whether a patient is receiving inappropriate critical care may identify targets to address moral distress. Studies show that nurses are often dissatisfied with the level of physician-nurse collaboration in morally distressing situations, leading to calls for increased interprofessional collaboration to improve patient care.<sup>3,7-9</sup> Increasing communication between physicians and nurses has been identified as a goal for improving the quality of end-of-life care in the ICU.<sup>14</sup> However, very few studies have demonstrated empirically that collaboration improves patient care.<sup>15,16</sup> Previously, we have quantified physicians' assessments of futile treatment in the ICU.<sup>17</sup> Here, we evaluated the differences between physicians' and nurses' assessments and explored whether combining physicians' and nurses' assessments might improve the prognostic implications of these assessments.

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### Methods

In this study, assessments of futile treatment in critical care by attending physicians and nurses at a health care system were evaluated for 3 months. Details of the definition of futile treatment and of the data collection are provided elsewhere<sup>17</sup> and are summarized here. This study was approved by UCLA's institutional review board (IRB#11-002942).

### Assessment of Futile Critical Care

Thirteen attending clinicians who provide care for critically ill patients were convened for a focus group to describe and discuss patients for whom

they provided ICU treatment that they judged to be futile. Audiotapes were transcribed, and categories of treatment perceived to be futile were identified, for which there was consensus.

Based on the focus group discussion, a questionnaire was developed to identify patients who were receiving treatment perceived to be futile, treatment that was probably futile, or treatment that was not perceived to be futile. For patients judged to be receiving futile treatment, the provider was asked to provide the reason(s) that the treatment was perceived to be futile from among the reasons derived from the focus group: burdens grossly outweigh benefits, patient will never survive outside of an ICU, patient is permanently unconscious, treatment cannot achieve the patient's goals, or death is imminent. Providers could also write in a reason.

Every day from December 15, 2011, through March 15, 2012, research assistants administered the questionnaire to the attending physicians and critical care nurses providing treatment in 5 ICUs in the health system: the medical ICU (MICU), the neurocritical care unit (neuro-ICU), the cardiac care unit (CCU), the cardiothoracic ICU (CT-ICU), and the academic community hospital's mixed-use ICU. Physicians and nurses were surveyed independently and were asked to make assessments only on patients under their care. On any given day, a patient is assessed once by the nurse and once by the physician. All providers gave informed consent and filled out a brief questionnaire.

### Other Data Collection

Patients' demographic data were obtained from the hospital's administrative data, including age, sex, ethnicity and race, type of insurance, and zip code (used to compute distance from home to hospital); source of admission; and Medicare severity diagnosis-related group (MS-DRG) weight. Sources of admission included the emergency department, outpatient setting, skilled nursing facility (SNF), long-term acute care (LTAC) facility, and transfer from an outside hospital (usually for a higher level of care). Distance from residence to the hospital was dichotomized at 20 miles (32.2 km). As a measure of severity of illness, we used MS-DRG weight, which is determined by the patients' diagnoses and the resources required during their hospitalization. The date of hospital admission was subtracted from the date of the assessment by the physician or nurse to compute the hospital day of the futility assessment. Midnight and noon census data were obtained for each ICU to determine daily occupancy. An ICU was considered "full" on days when the mean census at midnight and noon showed fewer than 2 available beds (1 bed is always reserved

as a "code bed"). Hospital and 6-month mortality were abstracted from electronic medical records and publicly available death records.

### Statistical Analysis

Days where both the physician and nurse assessed the same patient were identified. For these days, the number of futile, probably futile, and not futile treatment assessments by physicians versus nurses were compared by using a  $\chi^2$  test. A  $\chi^2$  test was also used to compare the number of patients assessed as receiving futile treatment by physicians, nurses, or both. The frequencies and numbers of reasons listed for a futile assessment by a physician or nurse were compared by using a  $\chi^2$  test and a *t* test, respectively.

Separate multivariate models for physicians' and nurses' assessments were generated to understand the predictors of an assessment of futile treatment. Only days where there was an assessment by both the physician and the nurse were included. We used a multilevel ordered probit mixed effects model to account for repeated measures on patients and providers. Models were estimated by using the MCMCglmm function in R 3.0.<sup>18</sup> The ordered probit model assumes that the predictors have approximately equal effects on moving from nonfutile to probably futile treatment and moving from probably futile to perceived futile treatment. We tested the proportionality assumption for both physician and nurse models by comparing 2 models where the ordinal outcome was dichotomized into nonfutile versus probably futile and perceived futile in the first model and nonfutile and probably futile versus perceived futile in the second model. Model estimates did not differ significantly between the 2 models for either physicians or nurses, indicating that the proportionality assumption was met in both cases. We presented the mean marginal change in a patient's probability of receiving each type of assessment for a 1-unit change in the predictor.

To evaluate the prognostic implications of an assessment of futile treatment, we compared the hospital mortality and the 6-month mortality of the patients who were assessed as receiving futile treatment by the physician but not the nurse, by the nurse but not the physician, and by both the physician and the nurse.

### Results

Thirty-six critical care physicians and 288 nurses from 5 ICUs participated in the 3-month survey

Treatment was assessed every day as futile, probably futile, or not, by the nurse and physician.

**Table 1**  
Reasons listed for why treatment was perceived to be futile by physicians and nurses

Reason that treatment was perceived to be futile	No. (%) of patients with this reason listed	
	By physician (n = 113)	By nurse (n = 110)
Burdens grossly outweigh benefits <sup>a</sup>	65 (58)	87 (79)
Will never survive outside of an intensive care unit	41 (36)	51 (46)
Permanently unconscious	33 (29)	36 (33)
Treatment cannot achieve patient's goal	59 (52)	66 (60)
Death is imminent	39 (35)	44 (40)
Patient nonadherent to treatment	1 (1)	1 (1)
Futile treatment on day transitioned to palliative care	30 (27)	25 (23)

<sup>a</sup>  $P = .001$ .

study. Out of 7580 nurse assessments and 6897 physician assessments, there were 6254 assessments on 1086 patients that were made by both the nurse and the physician on the same patient on the same day. Nurses rated 89% of assessments as patients receiving nonfutile treatment, 5.2% of assessments as probably futile treatment, and 5.4% of assessments as futile treatment. Physicians rated 85% of assessments as patients receiving nonfutile treatment, 8.7% of assessments as probably futile treatment, and 6.7% of assessments as futile treatment. Each patient had 1 to 79 daily assessments (mean, 5.76; median, 3). Most assessments of futile treatment occurred early in the ICU stay, with 1 quarter of assessments within the first 3 days for physicians and the first 4 days for nurses. The median day of the first futile treatment assessment was day 8 for physicians and day 9 for nurses. At the patient level, nurses and physicians assessed approximately the same number of patients as receiving futile treatment (110 for nurses vs 113 for physicians); however, concordance as to which patients were assessed as receiving futile treatment was low ( $\kappa = 0.46$ ). Forty-four patients were assessed as receiving futile treatment by only the nurse, 47 patients by only the physician, and 66 patients by both the physician and nurse. Similar disagreement between nurses and physicians was observed on the broader category of "probably futile or futile treatment" (nurse alone 145 [31%], physician alone 165 [35%], both nurse and physician 157 [34%]) rather than futile treatment only.

#### Reasons Why Treatment Was Considered Futile

The reasons that nurses and physicians assessed patients as receiving futile treatment were similar. For both nurses and physicians, the most common reason for treatment to be perceived as futile was

that burdens grossly outweighed the benefits, and nurses used this reason more often than did physicians (nurses 79% vs physicians 58%,  $P = .001$ ). Between one-third and one-half, or more, of both nurses and physicians used the following as reasons that treatment was perceived as futile: patient would never survive outside of an ICU, patient was permanently unconscious, treatment could not achieve the patient's goal, or death was imminent (Table 1). On average, nurses listed more reasons than physicians for why they perceived patients as receiving futile treatment (2.8 vs 2.4,  $P = .03$ ). Among patients assessed by nurses to be receiving futile treatment who remained alive at 6 months, 77% had "burdens outweigh benefits" as a reason that nurses felt the critical care was futile.

#### Factors Associated With Nurses and Physicians' Assessments of Futile Treatment

In the multivariate multilevel ordinal probit model for nurses (Table 2) and the model for physicians (Table 3), the patient's age and the patient's hospital day were associated with an increase in the mean probability for patients to be perceived as receiving futile treatment. Also, patients admitted from an outpatient setting (vs emergency department) and patients admitted to the CCU or CT-ICU (compared with the MICU) were less likely to be assessed as receiving futile treatment. In the physicians' model, patients admitted from a SNF or LTAC and in the nurses' model, patients with higher MS-DRG scores were more likely to be perceived as receiving futile treatment. In the nurses' model only, female patients were also less likely to be assessed as receiving futile treatment, whereas no gender effect was apparent in the physicians' model. Ethnicity, race, insurance, distance to the hospital, and whether the ICU was full were not significant in either model.

#### Outcome of Patients Perceived to Receive Futile Treatment

For both nurses and physicians, hospital and 6-month mortality were significantly higher for patients perceived as receiving futile or probably futile treatment compared with patients receiving nonfutile treatment ( $P < .001$ ). The 113 patients categorized by physicians as receiving futile treatment had higher 6-month mortality than did the 110 patients so assessed by nurses (85% vs 68%,  $P = .005$ ; Table 4). To evaluate whether concordance between physicians' and nurses' evaluations was related to patients' outcomes, we compared patients assessed as receiving futile treatment by both the physician and the nurse with patients who were assessed as receiving futile treatment by only the nurse or only the physician (Table 5). The 66

**Table 2****Nurse model: mean marginal difference in probability of a patient being perceived as receiving treatment that was not futile, probably futile, and futile<sup>a</sup>**

Characteristic	Estimated difference in probability, mean (95% CI), %		
	Not futile	Probably futile	Futile
Patient's age (per decade)	-0.99 (-1.92 to -0.03)	0.31 (0.00-0.60)	0.68 (0.02-1.32)
MS-DRG weight	-0.44 (-0.71 to -0.16)	0.14 (0.05-0.23)	0.30 (0.11-0.49)
Hospital day of futility assessment (per day)	-0.15 (-0.20 to -0.10)	0.05 (0.03-0.06)	0.10 (0.07-0.14)
Female patient	2.90 (0.27-5.93)	-0.90 (-1.82 to -0.08)	-2.00 (-4.07 to -0.17)
Patient's race			
Asian	1.04 (-4.27 to 5.94)	-0.36 (-1.91 to 1.35)	-0.68 (-3.97 to 2.94)
Black	-3.38 (-8.60 to 1.22)	0.99 (-0.32 to 2.46)	2.39 (-1.03 to 6.03)
Other	1.11 (-4.46 to 6.45)	-0.39 (-2.16 to 1.38)	-0.72 (-4.22 to 3.15)
Hispanic	0.36 (-3.48 to 4.11)	-0.13 (-1.30 to 1.11)	-0.23 (-2.78 to 2.41)
Insurance			
Medicaid	-0.37 (-5.58 to 4.54)	0.09 (-1.45 to 1.69)	0.29 (-3.04 to 3.94)
Private	0.04 (-4.73 to 4.75)	-0.04 (-1.52 to 1.41)	-0.01 (-3.20 to 3.36)
Health maintenance organization	2.78 (-0.51 to 6.22)	-0.89 (-2.03 to 0.16)	-1.89 (-4.18 to 0.36)
Uninsured	5.59 (-0.40 to 10.47)	-1.95 (-3.88 to 0.16)	-3.64 (-6.82 to 0.08)
Residence > 20 miles (32.3 km) from hospital	-0.14 (-3.20 to 3.09)	0.04 (-0.92 to 1.05)	0.10 (-2.06 to 2.28)
Source of admission			
Outpatient setting	4.82 (1.28-8.29)	-1.61 (-2.75 to -0.27)	-3.21 (-5.51 to -0.92)
Transfer from outside hospital	-1.12 (-5.54 to 3.20)	0.33 (-1.11 to 1.57)	0.79 (-2.45 to 3.69)
Transfer from SNF/LTAC	-2.99 (-9.85 to 3.99)	0.84 (-1.03 to 2.87)	2.15 (-2.72 to 7.12)
ICU is full	-0.30 (-1.63 to 1.17)	0.09 (-0.37 to 0.50)	0.20 (-0.74 to 1.19)
Type of unit			
Neurological ICU	2.06 (-1.43 to 5.40)	-0.65 (-1.78 to 0.38)	-1.41 (-3.94 to 0.76)
Cardiac care unit	11.94 (9.42-14.25)	-4.46 (-5.51 to -3.36)	-7.48 (-8.88 to -5.87)
Cardiothoracic ICU	11.66 (8.89-14.59)	-4.12 (-5.24 to -3.00)	-7.54 (-9.35 to -5.62)
Academic community hospital's mixed-use ICU	0.14 (-3.91 to 4.03)	-0.05 (-1.32 to 1.15)	-0.08 (-2.70 to 2.80)

Abbreviations: ICU, intensive care unit; LTAC, long-term acute care facility; SNF, skilled nursing facility; MS-DRG, Medicare severity diagnosis-related group.

<sup>a</sup> Estimated mean difference in percentage probability of being perceived by nurses as receiving treatment that is not futile, probably futile, or futile. A positive percentage is more in a specific category than the reference group; a negative percentage, less. Effects that were significant ( $P < .05$ ) in the model are bolded. Reference for female is male, for race is white, for Hispanic is non-Hispanic, for insurance is Medicare, for source of admission is emergency department, and for type of unit is the medical ICU. MS-DRG weight is a measurement determined by the patients' diagnoses and the resources required during their hospitalization and used to reflect the patient's severity of illness. An ICU was considered "full" on days when the mean census at midnight and noon showed fewer than 2 available beds (1 bed is always reserved as a "code bed").

patients assessed as receiving futile treatment by both providers (42% of all those assessed as receiving futile treatment) were more likely to die in the hospital than the 44 patients (28%) assessed as receiving futile treatment by the nurse alone (76% vs 32%,  $P < .001$ ) or the 47 patients (30%) assessed to be receiving futile treatment by the physician alone (76% vs 57%,  $P = .04$ ).

## Discussion

In this study, nurses and physicians evaluated the same patients on the same days, but disagreement was considerable about which patients received treatment perceived to be futile. Nurses and physicians agreed that 66 patients were receiving futile treatment, whereas 91 patients were assessed as receiving futile treatment by 1 provider group but not the

other. The 157 patients assessed as receiving futile treatment by either the nurse or physician represented only 14.5% of the patients assessed during the 3-month study period, but equated to having at least 1 patient perceived to be receiving futile treatment in every unit nearly every day (88%-100% of days, depending on unit), and the burdens of providing treatment perceived to be futile may have been experienced by all members of the critical care team regardless of direct patient care.

Moral distress is common among critical care nurses.<sup>3,4,19-22</sup> Moral distress has been defined as "the psychological disequilibrium and the state of negative feelings experienced when a person makes a moral decision but does not follow through by performing the moral behavior indicated by that decision."<sup>20</sup> In critical care, this experience is most

**Table 3**

Physician model: mean marginal difference in probability of a patient being perceived as receiving treatment that was not futile, probably futile, and futile<sup>a</sup>

Characteristic	Estimated difference in probability, mean (95% CI), %		
	Not futile	Probably futile	Futile
Patient's age (per decade)	-2.70 (-3.98 to -1.49)	1.04 (0.53-1.50)	1.66 (0.92-2.46)
MS-DRG weight	0.14 (-0.19 to 0.48)	-0.06 (-0.19 to 0.07)	-0.09 (-0.29 to 0.12)
Hospital day of futility assessment (per day)	-0.24 (-0.29 to -0.18)	0.09 (0.07-0.12)	0.14 (0.11-0.18)
Female patient	3.51 (-0.15 to 7.00)	-1.34 (-2.68 to 0.03)	-2.17 (-4.38 to 0.09)
Patient's race			
Asian	0.20 (-7.04 to 6.78)	-0.16 (-2.69 to 2.59)	-0.04 (-4.28 to 4.13)
Black	-3.74 (-10.23 to 2.68)	1.28 (-0.81 to 3.51)	2.46 (-1.84 to 6.67)
Other	0.22 (-6.98 to 7.16)	-0.17 (-3.02 to 2.43)	-0.05 (-4.15 to 4.53)
Hispanic	0.16 (-5.24 to 4.96)	-0.09 (-1.99 to 1.91)	-0.07 (-3.19 to 3.08)
Insurance			
Medicaid	-6.86 (-13.87 to 0.76)	2.32 (-0.19 to 4.50)	4.54 (-0.45 to 9.59)
Private	-4.54 (-11.11 to 2.28)	1.52 (-0.73 to 3.59)	3.02 (-1.39 to 7.74)
Health maintenance organization	-2.13 (-6.51 to 2.63)	0.78 (-0.87 to 2.46)	1.35 (-1.65 to 4.15)
Uninsured	3.55 (-5.33 to 11.57)	-1.61 (-5.36 to 2.02)	-1.93 (-6.23 to 3.38)
Residence > 20 miles (32.3 km) from hospital	-2.18 (-6.27 to 1.93)	0.83 (-0.73 to 2.38)	1.35 (-1.22 to 3.88)
Source of admission			
Outpatient setting	8.02 (3.39-12.29)	-3.52 (-5.42 to -1.25)	-4.51 (-6.78 to -1.99)
Transfer from outside hospital	-1.93 (-7.31 to 3.50)	0.69 (-1.29 to 2.61)	1.25 (-2.37 to 4.56)
Transfer from SNF/LTAC	-16.53 (-26.20 to -7.39)	4.65 (2.50-6.78)	11.88 (4.63-19.56)
ICU is full	-0.09 (-1.19 to 1.08)	0.03 (-0.42 to 0.47)	0.06 (-0.64 to 0.75)
Type of unit			
Neurological ICU	6.35 (-5.14 to 15.82)	-2.54 (-6.46 to 1.44)	-3.82 (-9.70 to 3.31)
Cardiac care unit	13.74 (9.74-16.94)	-6.78 (-8.77 to -4.71)	-6.96 (-8.64 to -5.22)
Cardiothoracic ICU	11.46 (5.35-16.70)	-5.19 (-7.67 to -2.22)	-6.28 (-9.20 to -3.25)
Academic community hospital's mixed-use ICU	3.67 (-1.40 to 8.29)	-1.50 (-3.47 to 0.58)	-2.17 (-4.92 to 0.79)

Abbreviations: ICU, intensive care unit; LTAC, long-term acute care facility; SNF, skilled nursing facility; MS-DRG, Medicare severity diagnosis-related group.

<sup>a</sup> Estimated mean difference in percentage probability of being perceived by physicians as receiving treatment that is not futile, probably futile, and futile. A positive percentage is more in a specific category than the reference group; a negative percentage, less. Effects that were significant ( $P < .05$ ) in the model are bolded. Reference for female is male, for race is white, for Hispanic is non-Hispanic, for insurance is Medicare, for source of admission is emergency department, and for type of unit is the medical ICU. MS-DRG weight is a measurement determined by the patients' diagnoses and the resources required during their hospitalization and used to reflect the patient's severity of illness. An ICU was considered "full" on days when the mean census at midnight and noon showed fewer than 2 available beds (1 bed is always reserved as a "code bed").

**Table 4**

Comparison of mortality of patients assessed as receiving futile treatment by physicians vs nurses

Variable	No. of patients assessed as receiving futile treatment		P
	By physicians (n = 113)	By nurses (n = 110)	
Hospital death	77 (68)	64 (58)	.12
Death within 6 months	95 (85)	75 (68)	.005

often experienced in the setting of treatment perceived to be futile, when nurses feel compelled to provide treatments that they perceive not to be in the patient's best interest.<sup>3,4,7,19,21-23</sup> Moral distress

in nursing has been linked with lower job satisfaction, higher burnout, and higher job turnover.<sup>3,24-26</sup> Thus, it is important to reduce moral distress in critical care.<sup>19,20</sup>

The difference in outcomes of patients assessed as receiving futile treatment by nurses and physicians may provide additional insight into why nurses may accumulate greater levels of moral distress than physicians accumulate. Physicians' assessments corresponded more closely to mortality. The fact that patients assessed to be receiving futile treatment by nurses died in the hospital only 58% of the time and within 6 months 68% of the time raises the issue of how nurses defined futile treatment. Although mortality may correspond better to physicians' assessments because physicians write orders for life-sustaining treatment (and its withdrawal),

the relatively low mortality rate for patients assessed by nurses as receiving treatment perceived to be futile might suggest that nurses focused on factors such as suffering rather than survival. It is interesting to note that MS-DRG, which relates to the amount of resources used during a patient's hospitalization, was a significant variable only in the nurses' model of predictive factors for an assessment of futile treatment. Among patients assessed by nurses to be receiving futile treatment who remained alive at 6 months, 77% had "burdens outweigh benefits" as a reason that nurses felt that the critical care was futile. This result is consistent with the theme that nurses factor suffering more prominently into assessments of futile treatment. Nurses spend considerably more time at the bedside than do physicians and are most likely more aware of a patient's suffering. A higher level of intimacy with patients and patients' families may allow nurses to be privy to patients' goals and hopes that may be unachievable given the patients' medical conditions.

Unlike Piers et al,<sup>7</sup> who in a recent cross-sectional study also presented physicians' and nurses' assessments of perceived inappropriate care, we are able to evaluate concordance between physicians' and nurses' assessments and correlate those assessments with patients' outcome. Our study shows that when nurses' and physicians' estimates were combined, the assessments of futility were associated with a higher mortality rate than either assessment alone. This finding suggests that a collaborative model of assessing appropriate treatment might be best, consistent with prior publications advocating for a framework of interprofessional collaboration and shared responsibility for decision making to carry out the best plan for patient care.<sup>27</sup> Assessments of futile treatment and prognosis can be made explicit during rounds and documented in the medical record to foster discussion and consideration among all members of the health care team. Interventions should be undertaken to test whether such collaboration leads to improved decision making and perhaps less moral distress.

This study has several limitations, including the single study site and short duration. Furthermore, the categories of futile medical treatment were based on focus groups of physicians that did not include nurses. Yet, the nurses used the distribution of categories to an even greater extent than the physicians. Perspectives of patients and their families also were not included. We focused on futile treatment assessments rather than assessments that treatment was probably futile; however, the level of disagreement between nurses and physicians on the broader category of "probably futile or futile treatment" was

**Table 5**  
Comparison of mortality of patients assessed as receiving futile treatment by a nurse only, by a physician only, and by both physician and nurse

Variable	No. of patients assessed as receiving futile treatment <sup>a</sup>		
	By nurse only (n = 44)	By physician only (n = 47)	By both physician and nurse (n = 66)
Hospital death	14 (32)	27 (57)	50 (76)
Death within 6 months	18 (41)	38 (80)	57 (86)

<sup>a</sup> All pairwise comparisons were significantly different ( $P < .05$ ) except the comparison between physician only and both physician and nurse at 6 months.

similar, if not greater than, that for futile treatment alone. Moreover, hospital discharge and survival are crude validations of futility. A more detailed understanding of the foundation of nurses' and physicians' assessments of futility is needed.

In summary, exploring the differences in perception of futile treatment between nurses and physicians may provide further information about the various assumptions and bases of the conceptualization of "futile" treatment. We showed that prognostication is improved when physicians and nurses agree on the assessment of futile treatment, which suggests that increased interprofessional collaboration has the potential to improve patient care. Making such assessments explicitly—for instance, by having them stated during interdisciplinary rounds—not only may dispel misperceptions of prognosis (or enhance discussion to clarify differences in perspective), but also foster support for earlier palliation when it is needed.

#### FINANCIAL DISCLOSURES

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#### REFERENCES

1. Prendergast TJ, Luce JM. Increasing incidence of withholding and withdrawal of life support from the critically ill. *Am J Respir Crit Care Med.* 1997;155(1):15-20.

2. Angus DC, Kelley MA, Schmitz RJ, et al. Current and projected workforce requirements for care of the critically ill and patients with pulmonary disease: can we meet the requirements of an aging population? *JAMA*. 2000;284(21):2762-2770.
3. 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(2):422-429.
4. Meltzer LS, Huckabay LM. Critical care nurses' perceptions of futile care and its effect on burnout. *Am J Crit Care*. 2004;13(3):202-208.
5. Piers RD, Azoulay E, Ricou B, et al. Perceptions of appropriateness of care among European and Israeli intensive care unit nurses and physicians. *JAMA*. 2011;306(24):2694-2703.
6. Kompanje EJ, Piers RD, Benoit DD. Causes and consequences of disproportionate care in intensive care medicine. *Curr Opin Crit Care*. 2013;19(6):630-635.
7. Piers RD, Azoulay E, Ricou B, et al. Inappropriate care in European intensive care units: confronting views from nurses, junior and senior physicians. *Chest*. 2014;146(2):267-275.
8. Asch DA, Shea JA, Jedrziewski MK, Bosk CL. The limits of suffering: critical care nurses' views of hospital care at the end of life. *Soc Sci Med*. 1997;45(11):1661-1668.
9. Truog RD, Brett AS, Frader J. The problem with futility. *N Engl J Med*. 1992;326(23):1560-1564.
10. Brody BA, Halevy A. Is futility a futile concept? *J Med Philos*. 1995;20(2):123-144.
11. Wilkinson DJ, Savulescu J. Knowing when to stop: futility in the ICU. *Curr Opin Anaesthesiol*. 2011;24(2):160-165.
12. Schneiderman LJ. Defining medical futility and improving medical care. *J Bioeth Inquiry*. 2011;8(2):123-131.
13. Sibbald R, Downar J, Hawryluck L. Perceptions of "futile care" among caregivers in intensive care units. *CMAJ*. 2007;177(10):1201-1208.
14. Poses RM, Cebul RD, Centor RM. Evaluating physicians' probabilistic judgments. *Med Decis Making*. 1988;8(4):233-240.
15. Springrose JV, Friedman F, Gumnit SA, Schmidt EJ. Engaging physicians in risk factor reduction. *Pop Health Manage*. 2010;13(5):255-261.
16. Adams WG, Fuhlbrigge AL, Miller CW, et al. TLC-Asthma: an integrated information system for patient-centered monitoring, case management, and point-of-care decision support. *AMIA Ann Symp Proc*. 2003:1-5.
17. Huynh TN, Kleerup EC, Wiley JF, et al. The frequency and cost of treatment perceived to be futile in critical care. *Intern Med*. 2013;173(20):1887-1894.
18. R: A language and environment for statistical computing [computer program]. ISBN 3-900051-07-0. Vienna, Austria: R Foundation for Statistical Computing; 2012.
19. Rice EM, Rady MY, Hamrick A, Verheijde JL, Pendergast DK. Determinants of moral distress in medical and surgical nurses at an adult acute tertiary care hospital. *J Nurs Manage*. 2008;16(3):360-373.
20. Wilkinson JM. Moral distress in nursing practice: experience and effect. *Nurs Forum*. 1987;23(1):16-29.
21. Oh Y, Gastmans C. Moral distress experienced by nurses: a quantitative literature review. *Nurs Ethics*. 2013;22(1):15-31.
22. Mobley MJ, Rady MY, Verheijde JL, Patel B, Larson JS. The relationship between moral distress and perception of futile care in the critical care unit. *Intensive Crit Care Nurse*. 2007;23(5):256-263.
23. Corley MC. Moral distress of critical care nurses. *Am J Crit Care*. 1995;4(4):280-285.
24. Ozden D, Karagozoglu S, Yildirim G. Intensive care nurses' perception of futility: job satisfaction and burnout dimensions. *Nurs Ethics*. 2013;20(4):436-447.
25. Piers RD, Van den Eynde M, Steeman E, Vlerick P, Benoit DD, Van Den Noortgate NJ. End-of-life care of the geriatric patient and nurses' moral distress. *J Am Med Dir Assoc*. 2012;13(1):80 e7-e13.
26. Huffman DM, Rittenmeyer L. How professional nurses working in hospital environments experience moral distress: a systematic review. *Crit Care Nurs Clin North Am*. 2012;24(1):91-100.
27. Knirsch CA, Jain NL, Pablos-Mendez A, Friedman C, Hripcsak G. Respiratory isolation of tuberculosis patients using clinical guidelines and an automated clinical decision support system. *Infect Control Hosp Epidemiol*. 1998;19(2):94-100.

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