Family satisfaction with family conferences about end-of-life care in the intensive care unit: Increased proportion of family speech is associated with increased satisfaction*

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Objective: **Family members of critically ill patients report dissatisfaction with family-clinician communication about withdrawing life support, yet limited data exist to guide clinicians in this communication. The hypothesis of this analysis was that increased proportion of family speech during ICU family conferences would be associated with increased family satisfaction.**

Design: **Cross-sectional study.**

Setting: **We identified family conferences in intensive care units of four Seattle hospitals during which discussions about withdrawing life support were likely to occur.**

Participants: **Participants were 214 family members from 51 different families. There were 36 different physicians leading the conferences, as some physicians led more than one conference.**

Interventions: **Fifty-one conferences were audiotaped.**

Measurements: **We measured the duration of time that families and clinicians spoke during the conference. All participants were given a survey assessing satisfaction with communication.**

Results: **The mean conference time was 32.0 mins with an SD of 14.8 mins and a range from 7 to 74 mins. On average, family members spoke 29% and clinicians spoke 71% of the time. Increased proportion of family speech was significantly associated with increased family satisfaction with physician communication. Increased proportion of family speech was also associated with decreased family ratings of conflict with the physician. There was no association between the duration of the conference and family satisfaction.**

Conclusions: **This study suggests that allowing family members more opportunity to speak during conferences may improve family satisfaction. Future studies should assess the effect of interventions to increase listening by critical care clinicians on the quality of communication and the family experience. (Crit Care Med 2004; 32:1484–1488)**

KEY WORDS: end-of-life care; family satisfaction; communication; death; dying; critical care

Death is unfortunately a common occurrence in the intensive care unit (ICU); a recent study suggests that approximately 20% of deaths in the United States occur after a stay in the ICU (1). The majority of deaths that occur in the ICU throughout North America and Europe involve withholding or withdrawing life-sustaining therapy (2–6). At the time this decision occurs, most patients are unable to communicate for themselves, and therefore communication about decision making is often delegated to family members and clinicians (7). This decision making frequently occurs in the context of a "family conference" in which clinicians and families discuss the patient's condition and prognosis and the therapeutic options. Communication with clinicians is extremely important to family members: Families rate the communication skills of clinicians as having equal or higher importance than clinical skills (8). Interventions to increase communication with the family have been shown to reduce ICU length of stay for patients who ultimately die (9–11), but there is little evidence of the effect such interventions might have on the family experience, especially if these interventions are generalized to settings where clinicians do not have experience or expertise with family communication. Furthermore, studies suggest that ICU family conferences frequently do not meet families' needs for communication (12–14). Recent recommendations call on critical care clinicians to improve communication with families and to consider this an important part of high-quality care (15–17), and yet few studies suggest how communication might be improved. We examined communication during ICU family conferences concerning withdrawing life-sustaining treatments or the delivery of bad news. The overall aims of the study were to describe the content and process of clinician-family communication about end-of-life care occurring as part of ICU family conferences and to evaluate the quality of this clinician-family communication about end-of-life care. The specific aim of this report is to test the hypothesis that increased proportion of family speaking time during

***See also p. 1609.**

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Supported, in part, by an RO1 from the National Institute of Nursing Research (NR-05226-01) and from the Greenwall Foundation.

DOI: 10.1097/01.CCM.0000127262.16690.65

these conferences is associated with increased family satisfaction.

METHODS

We identified ICU family conferences during which the attending physician anticipated discussion of withdrawal of life-sustaining therapy or delivery of bad news. The study was conducted in four Seattle hospitals including a county hospital, a university hospital, and two community hospitals; study procedures were described previously (18). Family conferences were identified through daily contact with ICU charge nurses in each ICU Monday through Friday. Once a conference was identified, we contacted the attending physician by telephone. To be eligible, conferences had to meet the following criteria: a) the conference was scheduled to occur Monday through Friday; b) the conference would include family members and clinicians; c) the attending physicians anticipated a discussion of withholding or withdrawing life support or the delivery of bad news; and d) all conference participants spoke and understood English. We excluded patients who were <18 yrs of age but did not require that patients be terminally ill. If the attending physician consented to participate and granted permission for the study staff to approach the family, the nurse caring for the patient was asked to give a pamphlet describing the study procedures to family members and ask the family if they were willing to talk with study personnel. If all conference participants agreed and signed a consent form, two recording devices were placed in the conference room. The Institutional Review Board of each hospital approved all procedures.

Of 111 eligible family conferences identified, 19 were excluded because a physician or nurse requested that we not contact the family (two families were excluded for risk management reasons because of potential litigation and 17 because the physician or nurse believed the family was too distraught to participate). Twenty-four families refused to speak with study personnel. Of 68 families approached, 51 agreed to participate. The response rate for families contacted by study personnel was 75% (51 of 68) and, conversely, 25% of contacted families refused to participate. The proportion of all eligible conferences identified that were recorded was 46% (51 of 111). Figure 1 shows the recruitment results.

All family members and clinicians were asked to complete a questionnaire after the conference assessing satisfaction with the communication during the conference. The questionnaires were distributed to family members before the family conference in a sealed envelope that contained a self-addressed return envelope. Family members were asked not to open the envelope until after the family conference was completed. Clinicians were provided the questionnaire immediately after the conference along with a self-addressed envelope. The proportion of questionnaires returned was 76% (169 of 214) for family members and 97% for physicians leading the conference (35 of 36).

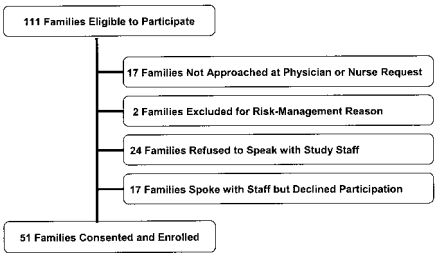

Figure 1. Flow diagram describing the enrollment of 51 family conferences.

Family satisfaction with communication was assessed using four questions (questions are presented in full in the Results). These questions each had a 0–10 response scale with the anchors of 0 = "the very worst I could imagine" and 10 = "the very best I could imagine." These questions were developed and validated previously (19). In addition, we used a summary score for satisfaction by adding the responses provided for each of these four questions and dividing by the number of questions. One additional question, also previously validated, assessed presence of conflict between family and physician with a 0–10 response scale with the anchors of 0 = "no conflict at all" and 10 = "a lot of conflict" (20). For conferences with more than one family member, we used the mean value from all family members who completed questionnaires because we believe this approach to be the best estimate of overall family satisfaction. We also assessed clinician satisfaction with communication using similar questions, although these data are not shown in this report.

Speaking time on recordings of conferences was measured with audio software by two investigators (JRM and TBE) who were unaware of the results of the family satisfaction data. These investigators measured the duration of the conferences, duration of physician and other clinician speech, and duration of family speech. Each duration measurement was recorded as the number of minutes and seconds. All clinicians participating in the conference were counted in clinician speech, although the majority of clinician speech was from the physician leading the conference. The duration of family speech and of clinician speech was divided by the total time of speech. In addition, we measured the duration of the "opening monologue" during which the physician leading the conference explained to the family about the patient's condition and current treatments.

To assess the correlation between satisfaction or conflict items and the duration of conference, proportion of family speech, or duration of the opening monologue, we used Spearman correlation coefficients to account for the nonparametric nature of the family satisfaction and conflict data. To assess associations between proportion of family speech or family satisfaction and either dichotomous or categorical variables, we used the Mann-Whitney test or analysis of variance, respectively. In addition, to test the robustness of these correlation analyses, we repeated these analyses discarding outliers for each analysis; there were no important changes in the results, so all data were included (data not shown). Statistical significance was defined as a two-tailed $p < .05$. To test for an association between physician characteristics and family satisfaction, we used Mann-Whitney tests for dichotomous physician characteristics and Spearman correlations for continuous physician characteristics. In addition, we also repeated these analyses using each physician only once to examine the possible effect of having some physicians with multiple conferences and found no differences with these two approaches.

RESULTS

Audiotapes were obtained for 51 family conferences. Family satisfaction surveys were returned for 45 conferences (90%). Table 1 shows demographic characteristics of the patients and of the conference participants including family members and physicians leading the conference. The patients' primary admission diagnoses were as follows: intracranial hemorrhage 17%, end-stage liver disease or gastrointestinal bleed 16%, trauma 16%, sepsis or infection 14%, respiratory failure 12%, cardiac failure or myocardial infarction 10%, and other diagnoses 15%. The proportion of patients who died during the hospital stay was 81% (41 of 51). Of the 51 conferences, 44 (86%) involved discussion of withholding or withdrawing life-sustaining treatments. The remaining conferences included delivery of bad news that focused on discussions of the patient's prognosis or a worsening of the patient's clinical status. The mean conference time was 32.0 mins with an SD of 14.8 mins and a range from 7 to 74 mins. The mean proportion of family speech was 29% with an SD of 15% and a range from 3 to 67%. The duration of the physician's opening monologue was an average of 4.2 mins with an SD of 3.3 mins and a range from no opening monologue at all to a maximum of 14.4 mins. Family satisfaction ratings were relatively high

on the 0–10 scale and skewed toward the high score with median scores for each item ranging from 9.0 to 9.6. The summary score of these four satisfaction items had a median of 9.4 with an interquartile range from 8.7 to 9.8. The rating of conflict was low with a median score of 0.0 with an interquartile range from 0.0 to 1.7 on the 0–10 scale (Table 2).

The proportion of family speech during family conferences correlated with the family members' ratings on all four satisfaction questions and the summary score from these four questions. In addition, there was a negative correlation between proportion of family speech and level of perceived conflict between family members and the physician leading the conference. There was no association between the total duration of the conferences and family satisfaction with communication (Table 2). There was, however, a trend toward longer conferences being associated with higher family ratings of conflict, although this did not achieve statistical significance. There was no association between the proportion of family speech and the conference duration ($\rho = 0.028$, $p = .84$).

There was a significant and positive association between the length of the opening monologue and the length of the conference ($r = .28$, $p = .05$), with longer conferences having longer opening monologues. There was also an association between the opening monologue and the proportion of family speech, but this association was negative ($r = -.43$, $p = .002$), indicating that longer opening monologues were associated with smaller proportions of family speech. However, there was no statistical association between family satisfaction with the communication and the duration of the opening monologue (all ps $> .10$; individual correlations not shown). There was no association between the proportion of family speech and the clinician satisfaction scores. There were also no significant associations between any of the physician characteristics in Table 1 and either the proportion of family speech or scores on family satisfaction items (all ps $> .05$).

Table 1. Demographic characteristics of the 51 patients, their family members who were present at conferences and returned questionnaires, and the physicians leading the family conferences

Characteristics	Patients (n = 51) No. (%)	Family Members (n = 169) No. (%)	Physicians Leading Conferences (n = 35) No. (%)
Gender			
Female	26 (51)	101 (60)	12 (34)
Race/ethnicity			
White	31 (61)	136 (81)	30 (86)
African American	7 (14)	14 (8)	0
Hispanic	2 (4)	6 (4)	2 (6)
Asian/Pacific Islander	1 (2)	5 (3)	4 (11)
Native American	1 (2)	10 (6)	0
Other/undocumented	9 (18)	0	1 (3)
Relationship to patient			
Spouse/partner		17 (10.1)	
Child		35 (20.7)	
Sibling		34 (20.1)	
Parent		20 (11.8)	
Friend		9 (5.3)	
Other relative		52 (30.8)	
Other		1 (0.6)	
Staff position			
Attending physician			20 (57)
Resident or fellow			15 (43)
Medical specialty			
Internal medicine			26 (74)
Neurology			5 (14)
Surgery			3 (7)
Internal medicine/anesthesia			1 (3)
	Mean (SD)	Mean (SD)	Mean (SD)
Age in years	60 (20.3)	48 (15.8)	38 (9.5)
Years in practice			12.4 (9.7)

DISCUSSION

On average, ICU clinicians spent 70% of the time during family conferences speaking and 30% of the time listening to

Table 2. Associations between measures of family satisfaction, proportion of family speech, and total conference length (n = 45 conferences)

	Family Satisfaction Items Median (25%, 75%)	Proportion of Family Speech ρ (Confidence Interval) [p Value]	Total Length of Conference, Mins ρ (Confidence Interval) [p Value]
Overall, how would you rate the doctor's communication with you during the family conference?	9.5 (8.8, 10.0)	0.37 (0.10 to 0.64) [.01]	−0.07 (−0.38 to 0.24) [.63]
During the conference, how well did the physician listen to what you have to say?	9.6 (8.8, 10.0)	0.44 (0.19 to 0.69) [.002]	−0.02 (−0.34 to 0.30) [.90]
How well did this conference help you understand the choices and decisions that may need to be made?	9.0 (8.5, 10.0)	0.31 (0.007 to 0.61) [.04]	−0.004 (−0.33 to 0.32) [.98]
Overall, how well did this conference meet your needs?	9.2 (8.4, 9.7)	0.31 (0.04 to 0.59) [.04]	0.08 (−0.24 to 0.40) [.62]
Summary score of the four satisfaction items above	9.4 (8.7, 9.8)	0.41 (0.15 to 0.68) [.005]	−0.003 (−0.32 to 0.31) [.99]
How much conflict, including disagreements and negative feelings, has there been between you and this doctor regarding your loved one's care?	0.0 (0.0, 1.7)	−0.31 (−0.57 to −0.05) [.04]	0.28 (−0.03 to 0.58) [.07]

Response scale for the first four questions was from 0 (the very worst I could imagine) to 10 (the very best I could imagine). Response scale for the conflict question was from 0 (no conflict at all) to 10 (a lot of conflict).

family members. Our results are consistent with the hypothesis that increased time for families to talk may result in increased family satisfaction. However, there are other potential explanations for these associations. First, it is possible that clinicians who allowed more time for families to speak had other behaviors that increased family satisfaction. Since physician characteristics were not associated with the proportion of family speech, this explanation seems less likely. In addition, it is possible that families that speak more during conferences may be more satisfied and feel less conflict for other reasons, although the trend toward longer conferences for family members who perceived more conflict does not support this alternative hypothesis. Finally, it is possible that clinicians provide satisfied families more opportunity to speak during family conferences. Although the causal pathway underlying the association is not clear, these findings suggest that clinicians might improve family satisfaction by providing family members more time to speak, and these data suggest the need for intervention studies to test this hypothesis.

Although the associations between the proportion of family speech are significantly associated with family satisfaction, the degree of the correlation is low to moderate. For example, only 13.7% (ρ^2) of the variation in families' overall satisfaction with the physicians' communication during the conference was explained by the variation in proportion of family speech. There are undoubtedly many other determinants of family satisfaction such as perceived contradictions in the information provided or the patient/nurse ratio (14). It is likely that clinician communication skills are also an important determinant of family satisfaction and an important target for interventions to improve family satisfaction (21). Finally, family satisfaction ratings overall were relatively high, and this "ceiling effect," with a significant proportion of family members rating individual communication items at the highest possible value, may limit our ability to detect correlations with other variables. These high satisfaction ratings are consistent with prior studies surveying family members regarding their satisfaction after having had a family member in the ICU (22, 23).

A previous study found that medical residents spent 75% of the time talking during discussion about do-not-resuscitate status with hospitalized patients (24). In comparison, we found that physicians spend a similar proportion of the time talking during family conferences in the ICU setting. Prior research of ICU family conferences suggests that family members' understanding of information provided during ICU family conferences is poor and conferences >10 mins are associated with increased understanding (12). In our study, 47 of the 51 conferences (92%) were >10 mins; although we did not examine family understanding, the duration of the conference was not associated with family satisfaction. The family's impression of the adequacy of time spent communicating with an ICU physician has been previously associated with family satisfaction, although actual duration of communication was not measured (14). These studies suggest that a minimum time may be needed to make a conference successful from the family perspective, but the proportion of time families speak may be more important than the total duration.

The negative association between the proportion of family speech and family-perceived conflict is provocative. Families and ICU clinicians frequently report conflict with one another, and much of this conflict concerns withholding or withdrawing life support (20, 25). One hypothesis that deserves further exploration is that the more opportunity families have to voice concerns, the less likely they are to perceive conflict with clinicians. Conversely, it is possible that families who perceive less conflict are more comfortable asking questions and raising issues. In support of the former hypothesis, prior research suggests that family members experience high levels of anxiety and that regular communication with ICU clinicians is associated with decreased anxiety (26). Providing families more time to discuss their concerns may be an effective way to address conflict and reduce anxiety.

This study has several important limitations. We were able to audiotape <50% of the conferences identified. Families refusing to participate may differ from those in the study, and, although there is no ethical alternative, these findings may not generalize to all families. In particular, families willing to participate may have better relationships with their clinicians and may also feel obligated to rate clinicians highly because these clinicians are providing care for their family member. Second, family satisfaction, although important, is not the only important outcome of communication during conferences. It may be important, at times, to share disappointing or upsetting information that informs medical decisions, yet this information may be associated with decreased family satisfaction. Although use of family satisfaction as the sole outcome oversimplifies the communication occurring in family conferences, we believe it is nonetheless one important outcome of this communication. Furthermore, the proportion of family speech is a relatively simplistic predictor of these complex speech acts. There are many verbal and nonverbal aspects of communication that might allow a more complete understanding of these complex conferences (27–29). Further study is needed to identify other aspects of communication associated with higher quality family conferences. Third, much ICU clinician-family communication occurs outside the family conference setting, especially nurse-family communication; this analysis cannot address such important forms of communication. Fourth, we summarized family satisfaction ratings within a family by using the average of all family members present. Although such a summary is the best reflection of the overall family satisfaction, information may be lost concerning differences among family members. A larger study would be needed to conduct hierarchical linear modeling necessary to address this issue. Finally, although physician demographic characteristics did not predict family satisfaction, it is possible there are other physician characteristics such as personality or interaction styles that may influence family satisfaction and confound the relationship between proportion of family speech and family satisfaction.

Our data, in the context of prior studies, suggest that ICU clinicians may improve family satisfaction within ICU family conferences if they spend less time

This study suggests that allowing family members more opportunity to speak during conferences may improve family satisfaction.

speaking and more time listening to family members. Although an observational study cannot prove this hypothesis, we believe that our data suggest a potential means for improving families' experiences during these conferences. Such an intervention, in combination with other means such as information leaflets, (30) educational Web sites, (31) and communications training for clinicians (32, 33), may improve family experiences at this difficult time. Prospective studies of interventions designed to improve communication and family satisfaction are needed to confirm these findings and identify additional tools for improving quality of care in the ICU.

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