A Brief Educational Intervention To Teach Residents Shared Decision Making in the Intensive Care Unit

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Abstract

Background: Effective communication is essential for shared decision making with families of critically ill patients in the intensive care unit (ICU), yet there is limited evidence on effective strategies to teach these skills.

Objective: The study's objective was to pilot test an educational intervention to teach internal medicine interns skills in discussing goals of care and treatment decisions with families of critically ill patients using the shared decision making framework.

Design: The intervention consisted of a PowerPoint online module followed by a four-hour workshop implemented at a retreat for medicine interns training at an urban, academic medical center.

Measurements: Participants ($N=33$) completed post-intervention questionnaires that included self-assessed skills learned, an open-ended question on the most important learning points from the workshop, and retrospective pre- and post-workshop comfort level with ICU communication skills. Participants rated their satisfaction with the workshop.

Results: Twenty-nine interns (88%) completed the questionnaires. Important self-assessed communication skills learned reflect key components of shared decision making, which include assessing the family's understanding of the patient's condition (endorsed by 100%) and obtaining an understanding of the patient/family's perspectives, values, and goals (100%). Interns reported significant improvement in their comfort level with ICU communication skills (pre 3.26, post 3.73 on a five-point scale, $p=0.004$). Overall satisfaction with the intervention was high (mean 4.45 on a five-point scale).

Conclusions: The findings suggest that a brief intervention designed to teach residents communication skills in conducting goals of care and treatment discussions in the ICU is feasible and can improve their comfort level with these conversations.

Introduction

INTERNAL MEDICINE RESIDENTS often lead discussions about goals of care and treatment decisions with families of patients with life-threatening illnesses in the intensive care unit (ICU). However, many residents lack the requisite communication skills to conduct these conversations.¹

Physician-family communication in the critical care setting poses several unique challenges. Most patients are unable to communicate at the time treatment decisions are made and the responsibility often falls to family members.² Inadequate physician communication frequently leads to conflicts with families and increases their symptoms of anxiety and depression during their loved ones' serious illness.³⁻⁷ Effective

physician communication in the ICU has been shown to decrease psychological distress among family members.^{8,9} Patient- and family-centered communication is now a national quality measure of ICU care.¹⁰⁻¹² Critical care experts recommend using the shared decision making framework for communication with families.^{13,14} In contrast to other communication frameworks such as paternalism and informed choice, shared decision making has been associated with higher levels of family satisfaction with physician communication in the ICU.¹⁴⁻¹⁶

Despite a recognized need for formal ICU communication skills training, there are no published studies to date on teaching medicine residents how to lead goals of care and treatment decision discussions with families in the ICU. This

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pilot study evaluated an educational intervention designed to improve medicine interns' decision making with families in the ICU when discussing goals of care and life-sustaining treatment. We assessed its feasibility and obtained preliminary measurements of participants' self-reported communication skills learned and comfort level with these discussions. We hypothesized that an intervention that combines an online educational module, role modeling, and role-play with standardized family members (SFM) would increase interns' knowledge of communication skills in shared decision making and comfort level engaging in goals of care and treatment decision discussions in the ICU.

Methods

Study setting and participants

The ICU communication skills intervention was piloted at the annual intern retreat at an internal medicine residency program (located in New York City) in spring 2011. The aim of the intervention was to prepare interns for their upcoming role to lead family meetings as ICU consult residents in their second year. The local institutional review board approved the study.

Intervention development and components

The intervention was developed using data generated from a needs assessment survey conducted with second-year residents in 2010. This survey asked residents to report on perceived needs for formal end-of-life communication training. Respondents universally indicated a need for more formal training in end-of-life discussions, particularly for their challenging role to lead goals of care and treatment discussions during their mandatory ICU rotations.

The intervention consisted of a PowerPoint online module to be reviewed prior to the retreat followed by a four-hour communication skill building workshop at the retreat. The online module, which was e-mailed to the interns prior to the retreat, covered topics related to ICU decision making,

including survival after cardiopulmonary resuscitation, do-not-resuscitate discussions, prognostication, and legal and ethical issues surrounding life-sustaining treatment decisions.

The workshop included the following components: (1) a large group didactics session (1 hour), (2) small group role-play with an SFM (2.5 hours, 6 interns, and 2 facilitators per group), and (3) a debriefing session (0.5 hour) (see Table 1). A palliative care (SM) and critical care (JC) specialist jointly led the interactive large group session, incorporating case discussions and video prompts. They taught communication skills in conducting a family meeting and determining goals of care in the critical care setting,¹⁷ and role modeled the shared decision making approach. The shared decision making model, which is based on a partnership with mutual exchange of information between the ICU team, patient, and family, incorporates the following key elements: assessing the patient/family's values and preferences, providing relevant medical information and a recommendation, and developing a consensus around a treatment plan.^{18,19}

Ten small group facilitators attended a one-hour training session before the retreat. Five standardized actors with training in communication skills teaching were recruited and provided scenarios with prompts for their responses prior to the retreat. The role-play scenarios were based on actual ICU clinical experiences of a randomly selected group of interviewed residents. A different participant played the resident role for each scenario. After each scenario, the participant critiqued his or her performance and received feedback from the SFM, facilitators, and other participants in the small group. For the debriefing session, each small group shared their most important learning points from the role-play exercise with the rest of the group.

Evaluation

At the conclusion of the retreat, participants completed a questionnaire that included (1) demographic items and questions about their previous formal training in end-of-life communication and experience in leading goals of care

TABLE 1. ICU COMMUNICATION SKILLS INTERVENTION COMPONENTS

Pre-retreat	PowerPoint Online Module Topics <ul style="list-style-type: none"> • Survival after CPR and ICU prognostication • Do-not-resuscitate discussions • Legal and ethical issues surrounding life-sustaining treatment decisions
Retreat workshop	Interactive Group Discussion (1 hour) <ul style="list-style-type: none"> • Led by critical care and palliative care specialist • Used trigger videos and participants reflected on past experiences • Role modeled communication skills using shared decision making framework Small Group Role-Play Exercise (2.5 hours) <ul style="list-style-type: none"> • Each group consisted of one SFM, two faculty facilitators, and six to seven participants • One participant plays the role of the resident for each of the three resident-family member encounters: <ol style="list-style-type: none"> 1) Inpatient ward, the ICU consult resident's first meeting with the daughter of an elderly patient with refractory AML who developed sepsis 2) ICU day three, the patient failed to respond to aggressive life-sustaining treatments 3) Inpatient ward, two days prior to the patient's acute decline on the medical ward • Feedback provided for role-playing resident from SFM, participants, and facilitators after each scenario Large Group Debriefing Session (0.5 hour) <ul style="list-style-type: none"> • Each small group shares learning points from role-play

AML, acute myelogenous leukemia; CPR, cardiopulmonary resuscitation; ICU, intensive care unit; SFM, standardized family unit.

discussions; (2) a skills assessment that asked participants to mark all communication skills learned from a list of 18 skills; (3) an open-ended question, "What are the most important things you learned from the workshop?" and (4) a retrospective pre- and post-intervention assessment of comfort level in performing seven communication skills in the ICU setting. Finally, participants provided an overall evaluation score for the intervention (on a Likert scale) as well as for the individual program components.

Analysis

Descriptive statistics were calculated for all study variables. For the skills assessment we calculated the percentage of respondents who marked each skill learned. Two investigators independently reviewed and coded responses to the open-ended question to identify recurrent themes. Paired *t*-tests were used to compare scores for the pre- and post-intervention comfort level assessment.

Results

Participant characteristics

Twenty-nine out of 33 (88%) participants completed the questionnaire. Respondents' mean age was 29, and most were

male (78%), reflecting the gender proportion in the entire intern class. Fifty-six percent had previously received approximately one to three hours of formal training in end-of-life communication (20% had no prior training, 24% had ≥ 4 hours). Sixty-two percent had previously led goals of care discussions in the ICU one to three times (23% had no prior experience, 16% noted ≥ 4 times).

Self-assessed communication skills learned

The majority of respondents reported learning skills associated with giving bad news, discussing goals of care and preferences for life-sustaining treatment, and determining code status preferences. The most frequent skills learned were to inquire about the family's understanding of the patient's condition (endorsed by 100%) and to obtain an understanding of the patient/family's perspectives, values, and goals (100%) (see Table 2).

Qualitative evaluation

The most commonly identified themes from the open-ended question on the most important things learned from the workshop included the following: (1) learn about the patient's life and baseline level of function, (2) assess the family's perspectives, (3) provide prognostic information and a

TABLE 2. SELF-ASSESSED COMMUNICATION SKILLS LEARNED FOR USE IN FUTURE GOALS OF CARE AND TREATMENT PREFERENCE DISCUSSIONS

<i>Skill assessment domain</i>	<i>Skill learned</i>	<i>% Respondents^a (n = 29)</i>
Communicating bad news	Start conversation by learning the family's understanding of patient's condition and expectations	100
	Avoid use of medical terminology and check for understanding	93
	Respond empathetically to patient/family's emotions	89
Discussing goals of care and preferences for life-sustaining treatment	Obtain an understanding of patient/family's perspectives, values, and goals	100
	Involve patient's primary care provider and others involved in the patient's care in determining the prognosis and goals of care	97
	Offer patient/family time to make decisions and the opportunity to readdress goals as patient's condition changes	96
	Frame treatment options (both ICU care and palliative care) in terms of positive choices by focusing on what will be done	90
	Inform patient or surrogate about the patient's prognosis	90
	Provide recommendation for an approach to care that would be consistent with patient's goals	86
	Ask about existing advance directives or knowledge about advance directives	86
	Explain role of surrogate to make decisions for patient based on substituted judgment	83
	Elicit and respect the patient/family's cultural and religious values that impact preferences for end-of-life treatment	69
	Suggest to patient/family a time-limited trial of life-sustaining interventions when appropriate	69
Determining code status preferences	Discuss goals of care and code status preferences with patients earlier in hospitalization and/or in outpatient setting given potential for patients to become seriously ill and lose decision making capacity	93
	Reach an agreement on goals of care and then discuss CPR preferences within context of established care goals	86
	Provide recommendation that weighs a patient's goals, prognosis, and chance of survival after CPR	79
	Clarify misconceptions and educate about risks and benefits of CPR (survival rates, complications) and alternatives to CPR	72
	Identify appropriate patients or surrogates with whom to discuss DNR order	72

^aIndicates % of respondents who marked each skill.

CPR, cardiopulmonary resuscitation; DNR, do-not-resuscitate; ICU, intensive care unit.

TABLE 3. MOST IMPORTANT THINGS LEARNED

Themes	Illustrative responses
Importance of expressing empathy	"Verbalize empathy as a means of improving the discussion and putting family members at ease." "Acknowledge the health care proxy's pain as well."
Learn about patient's life and baseline functional status prior to hospitalization	"Learn about your patients personally before the discussions." "The importance of learning about the patient's life prior to their critical illness and to assess their functional status."
Assess family's perspective including their understanding of the patient's condition, knowledge of patient's end-of-life wishes, and their goals and expectations	"Important things to cover in any discussion include family's understanding of the patient's condition and prior discussion of wishes." "Define with family what it means to get better."
Provide prognostic information and recommendation for an approach to care based on patient/family's values and goals	"It can be very valuable to make an informed statement about medical prognosis." "Can make recommendations without feeling too paternalistic while preserving autonomy." "You can say things like, 'Based on your values for your future, I think X is appropriate.'"
Decision making is an iterative process and allow patient/family time	"No need to push to meet discussion goals, decisions can be made over several sessions." "Always give patients opportunity to discuss with family and take time to make decisions."

recommendation based on the patient/family's values and goals, and (4) allow the patient/family time to make decisions because decision making is an iterative process. Table 3 provides the most common themes with illustrative quotes.

Comfort level discussing goals of care and treatment preferences

Table 4 shows that interns' comfort level ratings improved for all ICU communication skills assessed. These differences were statistically significant at $p < 0.05$ for all skills assessed.

Participant satisfaction

Participants gave a rating of good to excellent for the overall workshop (mean score 4.45 on a five-point scale; SD=0.62). Individual workshop components were also rated highly (see Table 5).

Discussion

This pilot study established the feasibility of a brief intervention designed to teach residents skills in leading goals of care and treatment discussions in the ICU setting. Our pilot

study shows that participants learned communication skills in discussing goals of care and treatment decisions in the ICU setting using the shared decision making framework and that they valued these as important skills. Furthermore, the intervention improved their comfort level with leading these discussions.

Few published interventions have addressed the communication challenges of decision making with families in the ICU and none have targeted medicine residents. Previous studies targeting medical students and critical care fellows have used SFMs in simulated encounters to teach communication skills in the ICU context.^{20,21} In controlled trials of end-of-life communication skills interventions, role modeling and case-based experiential learning (e.g., role-play) have been shown to be effective strategies to teach communication skills.²²⁻²⁴ Our multimodal intervention, which consisted of a PowerPoint online module, role modeling by experienced clinicians, and small group role-play with SFMs, suggests that these strategies combined can be effective when teaching advanced communication skills to residents. Our four-hour workshop was also shorter than many end-of-life communication interventions.²³⁻²⁶

TABLE 4. COMPARISON OF PRE- AND POST-WORKSHOP COMFORT LEVEL WITH SKILLS IN DISCUSSING GOALS OF CARE AND TREATMENT PREFERENCES IN THE ICU

Skill	Mean (SD) pre-retreat comfort ^a n = 29	Mean (SD) post-retreat comfort ^a n = 29
Discussing goals of care with patients and their surrogates	3.25 (1.21)	3.79 (1.10)
Discussing code status preferences	3.29 (1.18)	3.71 (1.08)
Discussing preferences for life-sustaining treatment with families of critically ill patients	3.03 (1.05)	3.62 (1.05)
Explaining the role of the surrogate decision maker	3.28 (0.92)	3.72 (1.07)
Responding to the emotions of patients/family members	3.31 (1.11)	3.66 (1.14)
Facilitating decision making with surrogates	3.18 (0.90)	3.71 (1.01)
Composite comfort level score	3.26 (0.88)	3.73 (0.95)

^aResponses were given on a five-point Likert scale (1=very uncomfortable to 5=very comfortable).
ICU, intensive care unit; SD, standard deviation.

TABLE 5. INTERVENTION EVALUATION

Question item	Mean rating ^a (S.D.) n = 29
Effectiveness of large group discussion led by palliative care and critical care faculty	4.34 (0.71)
Effectiveness of small group role-play in meeting educational objectives	4.24 (0.93)
Time allocated for teaching approaches to goals of care discussions in large group	4.31(0.59)
Time allocated for small group role-play exercise	4.28 (0.64)
Size of small groups	4.69 (0.46)
Preparedness of facilitators	4.83 (0.38)
Professionalism of standardized family members	4.66 (0.76)
Representative nature of case scenarios	4.55 (0.72)
Time allocated for role-play feedback	4.55 (0.56)
Quality of feedback from facilitator	4.71 (0.45)
Quality of feedback from SFM	4.21 (1.16)
Quality of feedback from other group participants	4.62 (0.49)
Effectiveness of PowerPoint online module on improving knowledge base on resuscitation and DNR orders	4.03 (0.81)
Effectiveness of PowerPoint online module on improving knowledge base on legal and ethical issues in end-of-life decisions	4.00 (0.91)
Suitability of setting for workshop	4.55 (0.67)
Overall workshop evaluation	4.45 (0.62)

^aResponses were given on a five-point Likert scale (1 = Poor, 2 = Fair, 3 = Average, 4 = Good, 5 = Excellent).
DNR, do-not-resuscitate; SFM, standardized family member.

Study limitations include a small sample size, the absence of a control group, and implementation in a single residency program. Furthermore, it cannot be determined whether thematic saturation for the qualitative evaluation was reached (given that a one-time assessment was done for this pilot study) and whether the reported positive changes persisted over time. Although the increase in comfort level measured using a five-point Likert scale was statistically significant, the clinical significance of this increase cannot be determined. Self-reported skills and attitudinal changes may not translate into changes in resident behaviors in real-life encounters. A recent study by Dickson and colleagues reported a lack of correlation between physicians' self-assessment of competency in end-of-life communication skills and assessments by patients, families, or clinicians on the quality of communication.²⁷ To provide a more objective measure of change in communication skills, prior studies have used blinded coders to rate audio recordings of standardized patient encounters before and after an intervention using an evaluation tool for specific communication skills.^{22,28,29}

Our next steps include utilizing the participants' feedback to refine the intervention. A larger, controlled study is planned to establish the efficacy of the intervention on changing the quality of resident communication in the ICU using an objective skills assessment (e.g., objective-structure clinical examinations using standardized patients or assessments of real-life discussions by patients, families, and clinician observers) and to determine whether the impact is sustainable over time. It will be important to evaluate the effect of such an intervention in larger samples in multiple institutions, on clinical outcomes such as patient and family satisfaction with communication and decision making in the ICU and alleviating the level of distress that family members experience when making difficult decisions for their loved ones.

Conclusion

In summary, our pilot study demonstrates the feasibility and potential value of a brief intervention that emphasized

role modeling and experiential learning to teach interns about shared decision making with families in the critical care setting. The findings from our preliminary assessments indicate the need to further refine the intervention, evaluate its impact on resident behavior over time, and determine its feasibility in other settings.

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Author Disclosure Statement

No competing financial interests exist.

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