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Care of Critically Ill Adults

Aligning critical care interventions with patient goals: A modified Delphi study

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ABSTRACT

Objective: To develop a list of non-emergent, potentially harmful interventions commonly performed in ICUs that require a clear understanding of patients' treatment goals.
Background: A 2016 policy statement from the American Thoracic Society and American College of Critical Care Medicine calls on intensivists to engage in shared decision-making when "making major treatment decisions that may be affected by personal values, goals, and preferences."
Methods: A three-round modified Delphi consensus process was conducted via a panel of 6 critical care physicians, 6 ICU nurses, 6 former ICU patients, and 6 family members from 6 academic and community-based medical institutions in the U.S. mid-Atlantic region.
Results: Recommendations about 8 interventions achieved consensus among respondents.
Conclusions: Clinical and patient/family participants in a modified Delphi consensus process were able to identify preference-sensitive decisions that should trigger clinicians to clarify patient goals and consider initiating shared decision-making.

Introduction

The Institute of Medicine defines high-quality healthcare as the degree to which "health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge."[1] In the ICU setting, establishing an individual's desired health outcome can be complicated. Patients are often unable to communicate and rely on family members,[2,3] who are sometimes unsure what outcomes their loved ones will consider acceptable. The desired outcome or goal that patients or families initially express is also not always achievable and frequently changes as prognosis becomes more or less certain.[4] As a result, determining whether a test or procedure is an appropriate way to achieve a critically ill patients' desired health outcome is challenging.

Recent research has estimated that intensivists make an average of 9 treatment decisions per patient during bedside rounds.[5] In a busy ICU this means making hundreds of decisions over a few hours. The vast majority of these decisions (e.g., electrolyte replacement) are unlikely to benefit from patient input. Patient or proxy input into other decisions is highly desirable, but real-time discussion is logistically impractical when responding to an acutely unstable patient (e.g., cardiopulmonary resuscitation). Previous work has shown that the preferred role of patients and their proxies also varies over the course of an illness and by whether the decision is technical, value-neutral, or value-laden.[6–9] A 2016 policy statement from the American Thoracic Society and American College of Critical Care Medicine calls on intensivists to engage patients and proxies in shared decision-making when establishing a patient's overall goals of care and when "making major treatment decisions that may be affected by personal values, goals, and preferences."[10,11] Given the inconsistent way shared decision-making is currently practiced in the ICU,[12–16] there is likely to be substantial variability in the interpretation of this guideline.

Abbreviations: ICU, Intensive care unit; JHCRN, Johns Hopkins Clinical Research Network.

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As a first step toward identifying triggers for considering shared decision-making, we sought to develop a list of non-emergent ICU interventions whose value is highly dependent on a patient's treatment goals. We chose to focus on non-emergent interventions because they allow time for a clinical team to locate a patient proxy, clarify patient goals, and deliberate. Emergent treatments generally must be discussed prospectively as part of advance care planning even though goals may change and the treatment may never be indicated. We used a 3-phase, modified Delphi consensus development technique that granted equal representation and full suffrage to clinical and patient-family experts.

Theory

Our consensus development process was based on the Delphi method. The Delphi method is a structured technique for harnessing expert opinion originally developed in the 1950s for scientific and technology forecasting.[17] Modified versions of the Delphi method have been employed in healthcare to reach consensus on issues lacking adequate empirical data including indicators of high-quality care,[18,19] research priorities,[20,21] disease definitions,[22] prescribing indicators,[23] and core outcome sets for clinical trials.[24,25] Although there is no universal guideline for the conduct or reporting of studies using the Delphi technique,[26] reviews of its use in healthcare have produced recommendations for best practices.[18,27] Common to all Delphi variations is the recruitment of a panel of informed experts. The panel completes a series of surveys or "rounds" related to the study question. After each round individuals compare their own responses to a summary of the entire panel's responses. A key feature of this methodology is that panel members remain anonymous so that prominent or opinionated panel members do not disproportionately influence results, and initial opinions and positions can be changed without publicly admitting error.[28,29] Whenever possible we adhered to recent recommendations for reporting modified Delphi consensus studies with the goal of selecting healthcare quality indicators.[18,27]

Materials and methods

Panel objective and intervention criteria

The objective of the expert panel was to identify tests and procedures ("interventions") which ICU clinicians, former ICU patients, and family members agree meet the following three criteria: 1) The intervention could potentially be incompatible with at least one of six previously validated treatment goals of ICU patients, 2) The intervention has the potential to cause physical, emotional, or financial harm to patients, and 3) The intervention can usually be anticipated on a non-emergent basis. These three criteria were developed as an *a priori* starting point by the study investigators. Panel members were given the opportunity to suggest additional criteria during Round 1 of the consensus process. Additional criteria suggested by panel members were adopted into the consensus process if supported by $\geq$ 80% of panel members participating in Round 2. The six treatment goals (evaluated within criteria 1 from above) were: 1) To be cured, 2) To live longer, 3) To improve health, 4) To maintain health, 5) To be comfortable, and 6) To accomplish a particular personal life goal. These goals were previously validated among ICU patients[30,31] and used in studies examining the concurrence of ICU care with patient treatment goals.[32]

Recruitment of the expert panel

We convened a panel of ICU physicians, ICU nurses, former ICU patients, and family members of former ICU patients from 6 hospitals within the Johns Hopkins Clinical Research Network (JHCRN). The JHCRN is an integrated network of academic and community-based medical institutions in the mid-Atlantic region ranging in size from 245 to >1000 beds in both rural and urban communities.[33] Each participating hospital was represented by 1 physician, 1 nurse, 1 patient, and 1 family member. At Johns Hopkins Hospital, the principal investigator asked the Patient and Family Advisory Council to nominate representatives. At the other 5 participating sites, JHCRN staff worked with ICU directors to identify representatives. Potential representatives were screened for eligibility and the study objectives and procedure were explained using a standardized telephone screening script. Physicians and nurses had to possess an MD, DO, or RN degree respectively, and have spent at least 4 weeks performing clinical work in an ICU during the past 12 months to be eligible. Patients and family members had to be former patients, or a family member of a former patient in one of the hospital's adult ICUs, be able to read and write in English, and have reliable internet and e-mail access. Patients and family members were not recruited together (i.e., not matched pairs) and there was no minimum or maximum severity of illness or length of stay requirement. The institutional review board of Johns Hopkins University approved the study and all expert panel members providing oral informed consent to participate.

Consensus development process

The consensus development process consisted of three rounds. Panel members received an e-mail at the beginning of each round containing a link to an individualized online survey. Surveys were developed using the Qualtrics© online survey platform. Results of each round were summarized and displayed on the study website (www.ccapg.org) with responses to open-ended questions provided on a password-protected page accessible only to panel members. All rounds were completed between January and November 2015 and anonymity of panel members was maintained throughout the process.

The overall goals of the rounds are summarized in Fig. 1 and were as follows: In Round 1, both interventions and criteria for including interventions were brainstormed and clinicians cast non-binding votes on an initial expansive list of candidate interventions. In Round 2, all participants reviewed proposed amendments to criteria, patients and family members provided data on the outcomes they felt were most important for clinicians to discuss with them when developing a treatment plan, and clinicians cast votes to narrow the list of candidate interventions. In Round 3, all participants cast binding votes on interventions receiving strong support in the previous two previous rounds.

Round 1

In Round 1, all panel members provided basic demographic information and answered questions about their previous experiences as ICU clinicians, patients, and family. The three criteria for identifying interventions, defined *a priori* by the study investigators (see panel objective and intervention criteria above) were explained, and all participants were asked to suggest other criteria that should be considered. All panel members were also asked to brainstorm interventions that might meet the three *a priori* criteria. Lastly, physicians and nurses were asked to review a list of 59 interventions and indicate (yes vs. no), whether each intervention fit the three criteria. This initial list of 59 interventions was derived from previous work enumerating and classifying tests and procedures commonly performed in ICUs[5,34] with additional input from critical care clinicians.