



Judgment of Futile Care in the ICU

To the Editor:

In a recent issue of *Critical Care Medicine*, Huynh et al (1) reported about the cost of futile treatment in the ICU. They make a valiant attempt to assess the impact of futile care provided in the ICU on patients awaiting ICU admission and costs to the healthcare system at large. With healthcare costs peaking toward the end of life and the aging demographic of ICU patients, the authors' focus of research is certainly the need of the hour. We applaud their efforts in quantifying this difficult topic of futility and its related cost. However, we have several concerns about how such findings might be applicable to clinical practice.

In particular, the authors highlight that futility was determined only from the point of view of the clinician and did not include the thoughts and opinions of patients and their families (1, 2). Schneiderman et al (3) describe a futile action as "one that cannot achieve the goals of the action, no matter how often repeated." We contend that futility is often quantified in terms of probability, but this term should only be applied to those clinical situations where the probability of the desired outcome is close to zero. For many patients and their families, particularly during critical illness, a probability of even 5–10% is better than zero, and beginning a discussion describing the relative risks and benefits in terms of odds of success or likelihood of failure may mislead or confuse further, particularly as many activities done in the context of critical illness serve quite well initial physiological goals (maintenance of blood pressure, oxygen saturation, heart rate, etc.) but may not individually affect likelihood of survival. As a further example, we note that of the 123 patients deemed to be receiving futile care in this study, 20 patients (16%) survived up to 6 months following hospital discharge (though details of their medical conditions were not reported) (2). The remaining 84% of patients either died prior to discharge (84/123) or had terminal conditions and/or severe cognitive impairment (19/123). In clinical practice, it would not be considered appropriate to unilaterally make an assessment of futility based on these findings if 16% of patients with such a determination would be expected to survive up to 6 months. Whether that survival is meaningful, even if quality of life is debased, is a judgment reserved for patients and their families and may be unlikely considered futile in their minds (16% chance of survival is better than 0%).

Indeed, futility judgments are often understood relative to specific clinical but value-laden goals (4). The same intervention may be considered futile with respect to one goal, for example, returning to premonitory quality of life, but may be

effective in relation to another, for example, surviving critical illness. Therefore, any meaningful definition of futility must be context dependent. As one might imagine, input from patients would be of utmost importance in understanding their goals and expectations from medical care. As a result, patient-centered and physician-centered perceptions of futility may be vastly different (5, 6). The authors allude to this in their study by discussing indeed why care that is considered futile is still even provided when clinicians have a right not to provide such care. This highlights the fact that opinions of patients and families often differ from those of clinicians. Further studies are needed to assess aspects of futility beyond clinician perception and to examine the conflicts that can occur when clinician and family opinions differ. We believe that critical care providers should be extremely cautious when using the term "futile" especially because our ability to predict futility is currently limited. Future research in this field should focus on better models of medical prediction and methods of conflict resolution in order to have candid and open discussions with patients and families. To conserve precious healthcare resources, employ palliative care at the appropriate time, and provide a timely referral to hospice care as needed are important and lofty goals, but likely only possible when the goals and expectations of patients and their families are engaged and duly respected.

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The authors reply:

We thank Reddy et al (1) for eloquently expressing their perspective regarding our publication on the opportunity costs of futile treatment in the ICU. Their primary concern is that the judgment of futility was made solely by the clinician and did not include the opinions of the patients and their families. We agree that the ideal paradigm of medicine is one of shared decision making, where medical recommendations are discussed within the context of patients' values and preferences. Far from advocating that patients' and families' opinions should be excluded, we believe that early frank discussion of prognosis and treatment options will lead to an improved match of treatments with patient values. However, this research recognizes what doctors in the foundational focus group told us: that there are some health states that critical care should not be used to perpetuate. Should critical care physicians not take responsibility for deciding when life-sustaining treatment is appropriate? A major part of a clinician's training is learning which treatments are indicated—they decide when a patient should be hospitalized, what imaging studies are needed, when antibiotics should be started and stopped, and whether a patient would benefit from surgery. Just as a family physician knows not to prescribe antibiotics for the common cold, the intensivist should avoid initiating dialysis on an imminently dying patient regardless of a family's insistence. Clinicians have the responsibility to apply healthcare resources where they are indicated and to avoid the treatments that are unnecessary, nonbeneficial, or harmful to the patient. The importance of critical care physicians carefully choosing which advanced, highly technical life-saving treatments are appropriate for which patients is perhaps best emphasized by considering the contrary circumstance: families, imbued with no knowledge of medicine and encumbered by grief, choose whether patients receive mechanical ventilation, continuous venovenous hemofiltration, and ventricular assist devices. Such a plan would not only be bad for patients but would be an absurdly unfair use of healthcare resources. These decisions are inextricably linked with the physician's responsibility for stewardship, and inappropriate critical care should not be provided simply because a patient or family "wants everything" (2). Thus, we argue that a clinician's assessment and recognition of futility is critically important and necessary in order to redirect some families and relieve suffering.

Reddy et al (1) also point out that the term "futile" is problematic because "many activities done in the context of critical illness serve quite well initial physiologic goals" without affecting survival. We agree that perhaps the term "inappropriate treatment" should replace "futile treatment" to avoid confusion with the concept of physiologic futility (3). The suggestion that the term "futile" should be avoided because medicine is probabilistic at best is well taken. However, just as every patient has the right to hear the risks and benefits of any procedure, the critically ill patient and their family should be engaged in conversations regarding the likelihood that aggressive critical care would lead to a meaningful recovery. It is only then that a fully informed decision can be made.

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There Is More Than Tidal Volumes in Mechanical Ventilation

To the Editor:

In a recent issue of *Critical Care Medicine*, de Jager et al (1) reported on a systematic review and meta-analysis of observational studies and randomized controlled trials in mechanically ventilated children. In contrast to the findings of meta-analyses of observational studies and randomized controlled trials in mechanically ventilated adults with (2) and without the acute respiratory distress syndrome (ARDS) (3), the meta-analysis by de Jager et al (1) did not identify a relationship between tidal volume size and mortality in mechanically ventilated children, irrespective of the severity of pulmonary injury. One possible explanation for their findings is that children might be less susceptible to ventilator-induced lung injury than adults (4).

However, there were notable differences in other ventilator settings and variables in the meta-analyzed observational studies and randomized controlled trials, including differences in the level of positive end-expiratory pressure (PEEP) and peak airway pressures (P_{peak}). Higher levels of PEEP have been found beneficial only in (adult) patients with moderate or severe ARDS (5). And while randomized controlled trial evidence for benefit of higher levels of PEEP in (adult) ICU patients without ARDS is lacking, one recent randomized controlled trial suggests a high level of PEEP not to protect against pulmonary complications, but instead to cause harm in mechanically ventilated (adult) patients under general anesthesia for surgery (6). Also, several investigations suggest an association between high driving pressures (and thus high P_{peak}) and a worse outcome in (adult) patients with ARDS (7, 8). Is the relationship between tidal volume size and mortality in mechanically ventilated children blurred by variability in other ventilator settings among