Neurocritical Care
Copyright © 2005 Humana Press Inc.
All rights of any nature whatsoever are reserved.
ISSN 1541-6933/05/2:198–205
DOI: 10.1385/Neurocrit. Care 2005;2:198–205

Ethical Matters

Medical Futility

Definition, Determination, and Disputes in Critical Care

*James L. Bernat**

Dartmouth Medical School, Hanover, NH

Abstract

Physicians may employ the concept of medical futility to justify a decision not to pursue certain treatments that may be requested or demanded by patients or surrogates. Medical futility means that the proposed therapy should not be performed because available data show that it will not improve the patient's medical condition. Medical futility remains ethically controversial for several reasons. Some physicians summarily claim a treatment is futile without knowing the relevant outcome data. There is no unanimity regarding the statistical threshold for a treatment to be considered futile. There is often serious disagreement between physicians and families regarding the benefits to the patient of continued treatment. Medical futility has been conceptualized as a power struggle for decisional authority between physicians and patients/surrogates. Medical futility disputes are best avoided by strategies that optimize communication between physicians and surrogates; encourage physicians to provide families with accurate, current, and frequent prognostic estimates; assure that physicians address the emotional needs of the family and try to understand the problem from the family's perspective; and facilitate excellent palliative care through the course of the illness. Critical care physicians should support the drafting of state laws embracing futility considerations and should assist hospital policymakers in drafting hospital futility policies that both provide a fair process to settle disputes and embrace an ethic of care.

Key Words: Futility; medical treatment; ineffectiveness; Ethics Committee; patient–physician relationship.

(Neurocrit. Care 2005;2:198–205)

***Correspondence and reprint requests to:**
James L. Bernat
Neurology Section,
Dartmouth-Hitchcock
Medical Center, Lebanon,
NH 03756.
E-mail:
bernat@dartmouth.edu

Introduction

In a previous article, I discussed the ethical issues involved in determining and communicating the prognosis of critically ill patients in a neurological–neurosurgical intensive care unit (ICU) *(1)*. I noted that the knotty problem of defining and determining medical futility was an important ethical issue in the prognosis of critically ill patients, but I chose to postpone a discussion regarding this controversial topic for a later, separate consideration. This article provides that discussion. I have reviewed the topic of medical futility within the broader context of clinical ethics elsewhere *(2)*.

Statement of the Problem

Medical futility is a concept that appears straightforward at first, but it grows in complexity with further analysis. Simply stated, medical futility refers to a physician's prognostic pronouncement that as a consequence of irretrievable illness or injury, further therapy will not improve the patient's condition and, therefore, should not be attempted. The determination of medical futility has an immediate ethical implication: because further therapy in this situation is futile and cannot help the patient, physicians have no ethical obligation to provide it, even

when the therapy in question is requested or demanded by the patient's family. Some scholars have further asserted that based on concepts of justice, physicians have an ethical duty not to prescribe futile therapy *(3)*.

The intuitive simplicity and practical usefulness of a determination of medical futility has led to its inclusion in numerous hospital policies, commission reports, and judicial decisions as a criterion by which physicians can cease aggressive treatment. For example, the influential bioethics policy report of the President's Commission cited the determination of futility as sufficient grounds for physicians to withhold or withdraw life-prolonging therapy *(4)*. Similarly, the American Medical Association (AMA) cited futility as a valid reason for physicians to write a do-not-resuscitate (DNR) order, even without patient consent *(5)*.

However, defining and determining medical futility has proved elusive. One reason is that the term has been applied to at least two distinct phenomena: (1) a physician's prognostication that a therapy will produce no physiological effect, and (2) a physician's prognostication that a therapy may produce a physiological effect, but the effect will provide no medical benefit to the patient *(6)*. Others have used "futility" in an inexact and self-serving way to summarily pronounce a proposed therapy as ineffective (with no knowledge of relevant outcome studies) because, for undisclosed reasons, they do not wish to prescribe it *(7)*. Additionally, there is disagreement regarding the statistical threshold for futility. One review showed that some physicians do not declare a therapy futile unless its success rate is 0%, whereas others consider it futile even with success rates as high as 13% *(8)*. A recent study of the concordance of futility determinations by physicians and nurses in an ICU found disagreement regarding at least one of the daily futility judgments in 63% of dying patients *(9)*.

Problems resulting from the inconsistent and self-serving uses of the concept of medical futility have led some scholars to recommend a moratorium on applying the concept until consensus can be reached regarding its meaning and determination *(10)*. Perhaps some degree of consensus has now been achieved. Helft, Siegler, and Lantos *(11)* recently described the rise and fall of the futility movement, showing that few scholarly articles about medical futility were published prior to 1987, scholarly articles about the concept peaked in 1995, and scholarly articles have decreased markedly since 1995. One explanation for the rise and fall of futility scholarship is that fresh approaches to the topic have been exhausted. Another is that even if societal consensus has not been achieved regarding application of medical futility in practice, at least the areas of controversy have been clarified.

Definition and Criterion of Medical Futility

Schneiderman, Jecker, and Jonson *(12–14)* proposed the most precise analysis of medical futility. Schneiderman and colleagues *(12)* stated that a medical act is futile if (based on empirical data) the desired outcome, although possible, is overwhelmingly improbable. In other words, the desired outcome that a therapy will benefit a patient will not occur, based on the best available evidence. However, futility is not impossibility. The fact that a few past successes of treatment may have occurred, despite hundreds or thousands of failures, does not disprove the futility of the act at hand. Nor is futility equivalent to hopelessness. Futility is an objective situation, whereas hopelessness is a subjective attitude *(12)*.

This definition of medical futility generates two criteria that comprise independent variables: so-called quantitative and qualitative futility assessments. The quantitative component is the numerical probability that an act will produce the desired physiological effect. The qualitative component is the numerical probability that the physiological effect will benefit the patient. A futility calculation is the product of the quantitative and qualitative components. As either component approaches zero, the product approaches zero, and the act becomes futile *(12)*.

Therefore, a determination of medical futility is analogous to a typical calculation in clinical decision analysis. In clinical decision analysis, the force of proceeding with a clinical decision is the product of two independent variables: the numerical probability of its success and its utility. Applied to treatment decisions, utility refers to the quality of its outcome. Therefore, a determination of medical futility can be made either in the presence of a vanishingly small probability of physiological effect or an exceedingly poor quality of outcome.

Notwithstanding this imprecision, the controversial issues concerning futility are just beginning. First, there are categorical limits to determining the quantitative component. Many treatment decisions lack valid outcome data from which to determine confidence intervals and other statistical measures of the certainty of outcomes. Second, some published outcome data are invalid because of faulty study design or the incorporation of systematic errors such as the fallacy of the "self-fulfilling prophecy" *(1)*. Third, even with valid and correctly applied outcome data, only a statistical prognosis can be given, because outcome data predict the behavior of a group more accurately than of individuals within the group *(15)*. Fourth, and most importantly, there is no consensus regarding the numerical threshold for an act to be labeled futile. For example, should we say a proposed therapy is futile if the probability of physiological effect is 0.0001, 0.0001, 0.01, or even 0.1? Realistically, there is a continuum of outcome probabilities for every clinical intervention. The point on the outcome probability continuum at which futility occurs is inherently arbitrary and is determined differently among physicians and patients *(16)*.

The qualitative dimension of futility is even more controversial because, by requiring a judgment of the quality of the treatment outcome, it is inescapably subjective. Who should be authorized to judge and by what standards—what is the minimal quality of a patient's life an intervention must achieve not to be considered futile? What if the physicians and patient or family disagree? For example, consider an intervention that succeeded only in prolonging the life of a patient in a persistent vegetative state (PVS) and did not improve the patient's chance of regaining awareness. Most physicians would judge it to be futile, because they generally believe that merely maintaining a noncognitive state confers no benefit to the patient. But what if the patient's family members disagreed and believed their loved one's continued life in PVS was beneficial to the patient, even if he or she could never regain awareness? Whose opinion should prevail?

Physicians are correct in the claim that specialized training confers on them the authority to determine medical benefit. For example, only a physician is authorized by knowledge

and experience to determine if surgical removal of an intracerebral hemorrhage is likely to improve a patient's neurological outcome. However , in the case of a therapy that prolongs the life of a patient in PVS, is declaring this therapy futile a learned, technical assessment of determining medical benefit or simply a value judgment about the quality of the patient's life, for which physicians can claim no special professional authority *(17,18)*? The intersection of moral and medical judgments of clinical outcome is a gray area over which some physicians assert professional prerogative *(19)* and over which some nonphysician ethicists deny that physicians deserve any professional prerogative *(20)*.

Neurocritical Care Examples

Three case histories illustrate the range and complexity of futility issues in neuro-ICUs. This article briefly describes and comments on futility disputes arising in patients with brain death, PVS, and advanced Alzheimer's disease.

Brain Death

The family of a patient with brain death refused to accept he was brain dead and insisted on further futile treatment until an agreement could be reached.

A 56-year-old man suffered an out-of-hospital cardiac arrest and was resuscitated after 25 minutes of ventricular fibrillation and asystole. Thereafter, he never regained any measurable brain functions on serial neurological examinations. Apnea testing was positive for apnea. Electroencephalogram (EEG) demonstrated electrocerebral silence. Brainstem auditory evoked potentials were absent. Radionuclide angiogram showed absence of intracranial blood flow. Vasopressor drugs were required to maintain blood pressure. Approximately 16 hours after admission, the patient was declared dead by brain criteria.

The neurologist explained the concept of brain death and its irreversibility to the patient's wife and brother and also explained the concept of offering organ donation. Family members were shocked, rejected organ donation, and did not believe it was possible for a person to be dead and remain warm, sustain a heartbeat, and produce urine. Several detailed conversations carried out over 2 days explained the conceptual and legal basis of brain death and the utter futility of further treatment, but these conversation were to no avail. The neurologist considered ordering extubation over the protests of the family on the grounds of futility but wished to avoid unnecessarily antagonizing them.

On hospital day 3, the patient's brother announced that his cousin was a neurophysiologist and wished to review the patient's EEG. This was urgently arranged, and after examining the EEG, the cousin declared the case hopeless. Consequently, the family agreed to extubation, which was performed immediately.

This case demonstrated how both the lack of trust in the physician and difficulty conceptualizing brain death interfere with proper medical care. Brain death is a clear case where the quantitative component of futility is met, because no treatment can help save the patient's life. Most instances of disputes with families regarding the diagnosis of brain death result from the emotional inability of family members to accept the diagnosis of death because of the presence of heartbeat and circulation. The continued presence of heartbeat and circulation provides false encouragement to some families that there is hope for neurological recovery. These cases need to be handled sensitively. First, valid religious objections to determination of brain death should be inquired about and respected, as I have explained elsewhere *(2)*. I believe that a brief length of continued support of ventilation and circulation is a compassionate response until the family accepts the inevitability of death. The length of such treatment must be determined individually by case. However, physicians remain on firm ethical and legal grounds to discontinue all treatment immediately once death has been declared—even over the objection of family members—based on futility and the provisions of state law.

Persistent Vegetative State

The celebrated case of Helga Wanglie in Minneapolis (1991) illustrates the two sides of the debate over the qualitative component of determining futility *(21,22)*.

Helga Wanglie was age 85 years when she developed a PVS from hypoxic–ischemic brain damage suffered during a cardiopulmonary arrest. Unlike most patients in PVS, she was ventilator-dependent and had failed trials of weaning. After she remained in the ICU in this state for several months, her neurologists stated with a high degree of certainty that she would never regain awareness. Therefore, her physicians recommended to her family that they withdraw the ventilator because it was providing no medical benefit.

However, her husband, daughter, and son disagreed with any suggestion to withdraw treatment and insisted that the ventilator treatment be continued. Although they initially denied that Mrs. Wanglie had made known her treatment preferences, they later reported that "she did not want anything done to shorten or prematurely take her life." When asked the reasons for the decision despite the dismal prognosis, Mr. Wanglie responded, "That may be true but we hope for the best." Mr. Wanglie indicated that only God can take a life and that the doctors should not play God. However, the family did consent to a DNR order.

Mrs. Wanglie's husband, an attorney, refused her physician's suggestions that she be transferred to another facility or that the family obtain a court order mandating her continued treatment with the ventilator. Notably, there were no financial incentives or disincentives for either the family or hospital, because her medical bills were being fully paid by insurance. Because of the attending physician's judgment that the medical staff was providing inappropriate care, the hospital decided to go to court to resolve the dispute. They asked the court to appoint an independent conservator to judge whether Mrs. Wanglie should remain on the ventilator. The husband filed a petition to be named her conservator, a motion that was subsequently granted by the court in their finding that he could best represent her interests. As expected, Mr. Wanglie continued to refuse to allow the ventilator to be withdrawn. The hospital continued ventilator therapy until Mrs. Wanglie died after living 1 year in PVS *(2)*.

The dispute in the Wanglie case centered around the value to Mrs. Wanglie of living her continued life in a PVS. Her physicians believed that the continued use of the ventilator was conferring no medical benefit on Mrs. Wanglie, and they urged that it be discontinued. However, Mrs. Wanglie's husband

strenuously disagreed and felt that preserving her life, even in a noncognitive state, justified the continuation of the ventilator. The dispute also highlighted differing concepts of authority for starting and stopping medical treatments. Mrs. Wanglie's physicians believed their professional authorization to determine medical benefit encompassed the decision about her continued ventilator treatment. Her husband believed that her physicians had no such authority to end her life. As has been the case in nearly all adjudicated futility questions, the court focused largely on the procedural question of who was best positioned to speak on the patient's behalf and sidestepped the substantive issue regarding the best course of action.

Advanced Alzheimer's Disease

Both quantitative and qualitative futility issues are exemplified by a case involving a patient with advanced dementia and multi-organ failure, whose son demanded life-sustaining treatment.

An 84-year-old woman with advanced Alzheimer's disease was transferred from a nursing home to the ICU for treatment of pneumonia and multi-organ failure. In the nursing home, her dementia had progressed to the point that she was mute, doubly incontinent, unable to recognize family members, had contractures of all extremities, and moaned when she was moved. On hospital admission, she was deeply comatose, required ventilator treatment for respiratory and cardiac failure, and was started on intravenous antibiotics for sepsis. She then developed acute renal tubular necrosis. Her physicians counseled that the most appropriate treatment was palliative care because of the prognosis of her underlying disease as well as the exceedingly small likelihood of her recovering from multi-organ failure. Her son, however, who was also her Durable Power of Health Care, insisted that she be treated aggressively with a ventilator, antibiotics, and hemodialysis. Her attending physician claimed that further life-prolonging therapy in her condition was futile, because it could not help her achieve her health care goals of recovery of cognition. The Ethics Committee was asked to mediate the dispute.

The ethics consultants interviewed her son and other family members at length. Her son indicated that "she was a fighter" and had previously indicated to him her wish to be treated aggressively and that doctors not "give up" on her. He understood her poor prognosis but claimed his actions were in accordance with his understanding of her treatment preferences, and he wished to fulfill such wishes. The ethics consultants met with him several times to discuss his decision. They explored with him the meaning of "doing everything" for her. One consultant asked the son if he would instruct her physicians to begin looking for heart and lung organ donors because of her cardiac and respiratory failure. He replied that organ transplantation was a ridiculous idea for her; therefore, the consultant made the son aware that even he was not doing everything possible. Nevertheless, the son continued to insist on aggressive treatment. However, the nephrologists refused to dialyze the patient, claiming that she was not a qualified candidate for dialysis because of her advanced dementia. Her son accepted this judgment, and she died 6 days later, still on the ventilator.

This case illustrates a serious treatment dispute over futility and the inability of the ethics consultants to successfully mediate. It also demonstrates how physicians who possess certain technical skills or who maintain control over certain high-technology therapies (e. g., surgery, dialysis) can simply refuse to provide it by claiming that the patient is not an appropriate candidate and how that claim, at times, may end the dispute. Many surrogates accept this pronouncement, although they may not accept that the patient cannot have a ventilator or medications. The case also indicates that when patients say they "want everything done," this statement is made in ignorance of the therapies available and usually intends to communicate that they do not want to be abandoned and wish to be actively treated. The ethics consultants doubted that the patient's true preference was to have the aggressive therapy administered and believed that the best active treatment was palliative care. They concluded that they were not going to convince her son but believed that it would be an uphill battle to convince a court to name a new surrogate for her. Her physicians were fully prepared to stop ventilator treatment on the grounds of futility but preferred the solution that ensued.

Varying Conceptualizations of Medical Futility

The medical futility argument has been conceptualized using differing schemes. Several scholars have interpreted the futility debate fundamentally as a power struggle for decisional authority between physicians and patients or their surrogates *(23,24)*. The physician in the dispute insists that medical professional authority encompasses the exclusive right to determine medical benefit and, therefore, authorizes physicians to choose unilaterally whether to provide the therapy in question. In contrast, the patient or surrogate insists that when the patient's post treatment quality of life is the fundamental issue, the concept of respect for self-determination provides a right to have the therapy in question. Who should prevail in such disputes, and how should they be resolved?

Some scholars have conceptualized futility disputes as a breakdown of the patient–physician relationship. For example, Lantos *(25)* stated that viewing the futility debate as merely a dispute between patients' rights and physicians' professional prerogatives fails to capture its essence. He argued that we can more completely grasp the problem by analyzing and understanding four aspects of the failure of the patient–physician relationship: power, money, trust, and hope *(25)*.

Futility disputes signal a clear breakdown of communication and trust between physicians and surrogates. The patient–physician relationship is based on trust, honesty, fidelity, and good communication. Futility disputes arise most often in ICUs, in situations in which there has not been sufficient time to nurture a trusting relationship between the surrogate and the treating physician. Lack of trust in physicians by surrogates may result from an absence of a previous professional relationship, compounded by the surrogate's fears, ignorance, and unrealistic expectations of treatment. Some surrogates express a dogged determination to "do everything possible," regardless of outcome probabilities or other considerations, because of their fierce loyalty to the patient or because of their guilt of abandoning the patient, as exemplified in the case of Alzheimer's disease mentioned earlier *(26)*. Careful, compassionate explanations and

emotional support to address surrogates' feelings about making decisions and to foster clear communication are necessary components of establishing trust. Explaining the principles of palliative medicine can reassure surrogates that active treatments that will benefit the patient most will continue.

There are additional issues implicit in futility determinations. Assume a world in which patients and surrogates were authorized by society to receive treatments they wished irrespective of physicians' and nurses' opinions. Should medical and nursing professionals be required to order and maintain what they consider futile treatments when doing so compromises their sense of professional integrity? Nurses often become outraged in cases in which they are required to provide certain types of care for patients that they fervently believe is wrong and compromises their professional integrity and duty to patients *(19)*.Therefore, medical and nursing professionals may regard providing futile care as an attack on the core of their professionalism.

Another important factor embedded in most futility arguments is the implicit or explicit rationing of scarce medical resources *(27)*. Society assigns physicians the role of stewardship of our communal, finite medical resources. Frequently, physicians must make treatment decisions that incorporate resource allocation considerations. The most straightforward situation involves allocating scarce ICU beds or ventilators when patient demand greatly exceeds supply. Such triage decisions require assessments of patient outcomes, including futility determinations. Because triage decisions occur daily in ICUs, physicians must make rapid determinations of which patients benefit most from ventilators and other ICU resources. The Society of Critical Care Medicine formulated guidelines to assist clinicians who make such triage decisions, employing ethical concepts such as nonmaleficence and justice *(28)*. These factors were relevant, although unstated, in the first case mentioned earlier.

Steven Miles, the physician in the Wanglie case, stated that his opposition to her continued ventilator and ICU treatment was based not on a futility determination but, rather, on his professional duty of stewardship of scarce medical resources. He believed that it was wrong for a permanently unconscious patient to take so disproportionately from the communal pool of scarce medical resources because other more meritorious patients—those who might recover with treatment—would be deprived as a result. He regarded providing continued respirator and ICU treatment to Mrs. Wanglie as irresponsible medical resource stewardship *(21)*.

Although rationing and allocation elements are implicit in most futility determinations, they are not the sole consideration. Indeed, Jecker and Schneiderman *(27)* argued that because of the professionalism aspect, much of the controversy about futility would remain, even if the rationing element were removed. However, the rationing issue does highlight one of the most pernicious difficulties with the futility debate. Some physicians summarily, but disingenuously, assert that a treatment is futile based not on valid outcome studies but because of a veiled consideration of rationing of scarce medical resources. Taylor and Lantos *(29)* argued that the frequency with which physicians employ this misleading argument is a principal reason to abandon the futility defense altogether. If the concept of medical futility is judged to be a valid reason to withhold or withdraw therapy, then physicians who use it must clearly separate its composite quantitative and qualitative elements from the legitimate, but independent, considerations of rationing.

Preventing and Resolving Futility Disputes

Most ICU physicians and surrogate decision makers establish good relationships and communicate effectively, thus permitting appropriate decision making for critically ill patients. Physicians are only forced to make futility determinations that trump surrogates' wishes in exceptional cases. For example, in a futility prevalence survey by Halevy and colleagues *(30)*, only 0.9% of patients in the ICU had predicted mortality rates exceeding 90%. In the multicenter study of Prendergast and colleagues *(31)*, 57% of patients and surrogates agreed immediately with physicians' recommendations to limit ICU treatment, 90% agreed within 5 days, and in only 4% of cases did patients or surrogates insist that all forms of treatment be continued.

Futility disputes are easier to prevent than to resolve. Steps for prevention include trying to establish clear channels of communication between ICU physicians and surrogates as well as other family members. Communication can be difficult in a busy ICU when attending and house staff physicians rotate frequently, family members get mixed messages from different physicians and nurses, and family members may be unclear regarding who is in charge. Surrogates and family members require answers to questions and explanations that may be time-consuming. They may ask questions about prognosis for which confident answers cannot be given, creating physician anxiety that may lead to avoidance of the family. Family members also commonly harbor their own fears and anxieties that color their perceptions of the reality of the situation.

Families of critically ill and dying patients have emotional and informational needs that should be addressed by ICU physicians and nurses. The Ethics Committee of the Society of Critical Care Medicine enumerated these needs that are listed in Table 1 *(32)*.

Family members' unrealistic expectations of treatment are an important factor that damages the therapeutic relationship. Commonly, an unfortunate problem is inherited by ICU physicians but is not of their creation. In an attempt to calm anxious family members, referring physicians may reassure them that once the critically -ill patient reaches the academic medical center, the miraculous technology and highly skilled physicians

Table 1
Emotional and Informational Needs of Families of Dying Patients

1. To be with the dying patient
2. To be helpful to the dying patient
3. To be informed of the dying patient's changing condition
4. To understand what is being done to the patient and why
5. To be assured of the patient's comfort
6. To be comforted
7. To ventilate emotions
8. To be assured that their decisions were right
9. To find meaning in the dying of their loved one
10. To be fed, hydrated, and rested

Modified from Ethics Committee of the Society of Critical Care Medicine *(32)*.

Table 2
Strategies to Minimize Conflicts and Negotiate Treatment Limits in the ICU

1. Keep patients and families informed.
2. Identify other staff members to facilitate good patient relations.
3. Promote realistic expectations.
4. Strive for accuracy in prognosis.
5. Maintain continuity of care.
6. Be compassionate and flexible.
7. Show firmness about limits.
8. Beware of making decisions based on economic market forces.

Modified from Prendergast *(33)*.

surely will be able to help or cure the patient. This message instantly raises the family's expectations of therapy to a level far higher than may be appropriate. ICU physicians may be thrown on the defensive from their first conversation with family members when they attempt to explain the poor prognosis and counsel limitation of treatment because of the unrealistic expectations previously communicated by the referring physician. One experienced academic physician routinely tells referring physicians that he will accept the critically ill patient in transfer only on the condition that the referring physician makes no promises to the family about the successes of ICU treatment.

In a remarkable article that has not received the attention it deserves, Prendergast *(33)* outlined a series of strategies for ICU physicians to prevent futility disputes. He argued that medical futility is a poor scheme for resolving end-of-life disputes, because it creates an adversarial relationship between the physician and patient/surrogate. Alternatively, Prendergast proposed a series of strategies to minimize conflicts and negotiate treatment limits; these strategies are listed in Table 2. Prendergast also explained how to apply the mediation and communication strategies developed by Fisher, Ury, and Patton for the business community to resolve disputes in the ICU setting. The mediation strategies comprise four elements: (a) identify the problem and separate it from the people involved; (b) focus on interests and not positions; (c) use objective criteria; and (d) invent options for mutual gains *(34)*.

In an educational intervention performed in more than 225 hospitals, Fins and Solomon *(35)* studied the elements of communication that are necessary to resolve futility disputes in the ICU. They found that good communication required not only the use of clear and understandable language but, importantly, required clinicians' self-awareness and recognition of the early stages of impending disputes, psychological insight into the cause of disputes, and an institutional culture that promotes good communication with families *(35)*.

In the small number of cases in which strategies of mediation and open communication fail to resolve the dispute, ICU physicians can request assistance in dispute resolution through intervention by social workers, chaplains, or the hospital ethics committee. A growing number of hospital ethics consultations are ordered for dispute resolution. Orr and deLeon *(36)* recently explained the techniques of dispute resolution by hospital ethics committees and consultants, including the techniques of negotiation, mediation, and arbitration. Most ethics committees practice mediation, a technique in which the ethics consultants are invited as a neutral party with allegiance only to the patient's interests. They work with both parties through mutual understanding and compromise to facilitate a resolution to the conflict that lies in the patient's best interests *(37)*. A recent study of the process of ethics consultation confirmed the success of this approach *(38)*.

Medical Policy Solutions

Advocates of employing a concept of medical futility to resolve disputes in end-of-life care proposed institutional and community-wide policies explaining how futility will be determined and stipulating the mechanism by which disputes over futility will be resolved *(39)*. In an influential 1993 editorial on future management objectives for the American health care system, *JAMA* editor George Lundberg urged physicians to define medical futility and suggested that hospitals develop guidelines for resolving futility disputes *(40)*.

In their consensus statement regarding futile and inadvisable treatments, the Ethics Committee of the Society of Critical Care Medicine recommended that all institutional futility policies possess the following features: (a) they are disclosed in the public record; (b) they reflect moral values acceptable to the community; (c) they are not based exclusively on prognostic scoring systems; (d) they articulate appellate mechanisms; and (e) they are recognized by the courts *(41)*. An additional desirable feature is uniformity: futility policies should require standardized definitions of futility. A 2000 study of futility policies in 26 California hospitals found that they contained similar definitions of futility *(42)*.

Using these recommendations, the AMA Council on Ethical and Judicial Affairs recommended a policy for physicians faced with futility disputes in end-of-life care containing an algorithmic step-wise approach. The policy permitted a physician's unilateral cessation of therapy only when all other avenues of negotiation had failed. They admonished physicians to conduct the steps listed in Table 3 in the given order *(43)*.

Because of the wide medical practice differences in futility determinations, medical futility remains a plausible concept only if is embraced by a community of physicians and patients *(44)*. Several groups have proposed and executed

Table 3
An Algorithm for Physicians Faced With Futility Disputes in the ICU

1. Deliberate values with surrogates and transfer patients to the care of another physician if the values conflict.
2. Conduct joint shared decision making using outcome data and value judgments.
3. Involve consultants if disagreements about data arise.
4. Involve the hospital ethics committee if disagreement continues.
5. Attempt to transfer the patient to another physician within the institution if disagreement continues.
6. Consider transfer to another hospital, if possible.
7. Only if all these measures fail and disagreement continues can physicians unilaterally cease the futile intervention.

Modified from the AMA Council on Ethical and Judicial Affairs *(43)*.

community-wide futility policies. The Houston City-Wide Task Force on Medical Futility (a consortium of leading hospitals in Houston), drafted and implemented a community-wide medical futility policy that was endorsed by the Harris County Texas Medical Society for use in all hospitals. The Houston policy states: (a) patients or their surrogates are required to be included in prognosis and treatment discussions from the time of admission; (b) physicians may not act unilaterally; (c) patients retain the right not to be abandoned and to be transferred to other institutions willing to care for them; (d) patient's and surrogate's wishes must try to be accommodated; and (e) there exists an institutional review mechanism to guarantee proper due process *(45)*. A consortium of hospitals in northern California drafted a similar proposal, but it was not implemented as a result of legal liability concerns *(46)*.

Even communities of patients and physicians may not be sufficiently large groups to adequately address futility disputes. In 1999, Texas became the first state to adopt a law regulating end-of-life decision making that included a provision to resolve disputes over medical futility. The Texas Advance Directives Act of 1999 provides a series of rules for physicians to follow in futility disputes. These rules require hospital ethics consultation to mediate the dispute. If mediation fails, then attempts should be made to transfer the patient to another physician or facility willing to provide the desired care. Only if no such person or facility can be identified can the physician unilaterally withhold the treatment found to be futile. Patients and surrogates can request judicial intervention to postpone the withdrawal of therapy if the court finds that with more time, a physician or institution could be found to provide the requested care. Physicians who follow the rules are granted immunity from civil and criminal liability for unilateral cessation of therapy *(47)*. A recent study at Baylor University Medical Center of the first 2 years' experience in settling futility disputes under this law found that it increased the volume of ethics consultations, markedly reduced the time spent in resolving futility disputes, and improved communication between physicians and surrogates *(48)*. In 2000, California enacted the Health Care Decisions Law, which contains similar provisions.

The Future of Futility

Where does medical futility stand now? Ideally, disputes in end-of-life care in which physicians assert futility to justify unilateral discontinuation of requested therapy are prevented. Strategies for ICU physicians to minimize such disputes include optimizing communication with patients and surrogates by being available, approachable, and compassionate; providing accurate and realistic prognoses on an ongoing basis; addressing the emotional needs of surrogates and supporting them through their lonely ordeal; empathically considering the surrogates' perspectives; providing excellent palliative care; and, in some cases, offering a trial of therapy to prove its futility.

Of course, despite conducting optimal communication and providing high-quality end-of-life care, some treatment disputes are inevitable. These disputes can best be resolved within the context of a societal consensus encompassing both the process and content elements of appropriate medical care of the critically ill and dying patient. Process consensus involves societal agreement regarding how disputes can be fairly mediated to respect the rights of patients, surrogates, and physicians. A fair process includes adequate communication of prognosis and treatment options, reasonable attempts to transfer the patient to a willing physician or institution, involvement of the hospital ethics committee as a mediator, and offering an appeal process, including judicial review. Content consensus involves community-wide agreement regarding what constitutes appropriate medical care at the end-of-life and, generally, what constitutes appropriate expenditures of scarce communal medical resources.

The bold, recently enacted, end-of-life treatment statutes of Texas and California are noteworthy attempts to resolve the medical futility debate. Legislative action probably is necessary because courts have been unwilling to grapple with the substantive questions of the medical futility debate *(49)*. Judicial unwillingness to enter the futility debate is best exemplified by the Wanglie case and even more egregiously by the highly publicized Baby K, an encephalic infant futility treatment case in which a federal district court ruling succeeded in completely sidestepping the substantive issues *(50)*. Absent state law, community-wide multi-institutional futility policies such as the Houston consortium can help. Absent community-wide hospital consortia, individual hospitals can craft futility policies following the recommendations of the Society of Critical Care Medicine Ethics Committee *(41)*.

Critical care physicians have an indispensable policy role in the futility debate. They can help design hospital futility policies assuring that, in addition to ensuring a fair process, embrace an ethic of care by espousing the principles of palliative medicine *(51)*. The end-of-life ICU treatment recommendations of the Society for Critical Care Medicine are exemplary *(32)*. Physicians can further inform the debate by creating and implementing evidence-based clinical practice guidelines incorporating prognosis and futility considerations *(42)*. All of these steps will help advance the goal shared by physicians and families that critically ill and dying patients in the ICU receive the most effective and appropriate medical care.

References

1. Bernat JL. Ethical aspects of determining and communicating prognosis in critical care. Neurocritical Care 2004;1:107–118.
2. Bernat JL. Ethical Issues in Neurology, 2nd ed. Butterworth-Heinemann, Boston, 2002, pp. 215–239.
3. Jecker NS, Schneiderman LJ. Medical futility: the duty not to treat. Cambridge Q Healthcare Ethics 1993;2:151–159.
4. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Deciding to Forgo Life-Sustaining Treatment: Ethical, Medical and Legal Issues in Treatment Decisions. U S Government Printing Office, Washington, DC, 1983, p. 219.
5. American Medical Association Council on Ethical and Judicial Affairs. Guidelines for the appropriate use of do-not-resuscitate orders. JAMA 1991;265:1868–1871.
6. Truog RD, Brett AS, Frader J. The problem with futility. N Engl J Med 1992;326:1560–1564.
7. Solomon MZ. How physicians talk about futility: making words mean too many things. J Law Med Ethics 1993;21:231–237.
8. Lantos JD, Singer PA, Walker RM, et al. The illusion of futility in medical practice. Am J Med 1989;87:81–84.

9. Frick S, Uehlinger DE, Zuercher Zenklusen RM. Medical futility: predicting outcome in intensive care unit patients by nurses and doctors – a prospective comparative study. Crit Care Med 2003;31:456–461.
10. Cranford RE, Gostin L. Futility: a concept in search of a definition. Law Med Health Care 1992;20:307–309.
11. Helft PR, Siegler M, Lantos J. The rise and fall of the futility movement. N Engl J Med 2000;343:293–296.
12. Schneiderman LJ, Jecker NS, Jonsen AR. Medical futility: its meaning and ethical implications. Ann Intern Med 1990;112:949–954.
13. Schneiderman LJ, Jecker NS, Jonsen AR. Medical futility: responses to critiques. Ann Intern Med 1996;125:669–674.
14. Schneiderman LJ, Jecker NS. Wrong Medicine: Doctors, Patients, and Futile Treatments. Johns Hopkins University Press, Baltimore 1995.
15. Truog RD. Can empirical data establish futility? J Clin Ethics 1992;3:315,316.
16. Prendergast TJ. Futility and the common cold: how requests for antibiotics can illuminate care at the end of life. Chest 1996;107:836–844.
17. Alpers A, Lo B. Futility: not just a medical issue. Law Med Health Care 1992;20:327–329.
18. Loewy EH, Carlson RA. Futility and its wider implications: a concept in need of further examination. Arch Intern Med 1993;153:429–431.
19. Brody H. The physician's role in determining futility. J Am Geriatr Soc 1994;42:875–878.
20. Veatch RM. Why physicians cannot determine if care is futile. J Am Geriatr Soc 1994;42:871–874.
21. Miles SH. Informed demand for "non-beneficial" medical treatment. N Engl J Med 1991;325:512–515.
22. Cranford RE. Helga Wanglie's ventilator. Hastings Cent Rep 1991;12(4):23,24.
23. Morreim EH. Profoundly diminished life: the casualties of coercion. Hastings Cent Rep 1994;24(1):33–42.
24. Daar JF. Medical futility and implications for physician autonomy. Am J Law Med 1995;21:221–240.
25. Lantos JD. Futility assessments and the doctor-patient relationship. J Am Geriatr Soc 1994;42:868–870.
26. Youngner SJ. Applying futility: saying no is not enough. J Am Geriatr Soc 1994;42:887–889.
27. Jecker NS, Schneiderman LJ. Futility and rationing. Am J Med 1992;92:189–196.
28. Society of Critical Care Medicine. Consensus report on the ethics of forgoing life-sustaining treatments in the critically ill. Crit Care Med 1990;18:1435–1439.
29. Taylor RM, Lantos JD. The politics of medical futility. Issues Law Med 1995;11:3–12.
30. Halevy A, Neal RC, Brody BA. The low frequency of futility in an adult intensive care unit setting. Arch Intern Med 1996;156:100–104.
31. Prendergast TJ, Claessens MT, Luce JM. A national survey of end-of-life care for critically ill patients. Am J Respir Crit Care Med 1998;158:1163–1167.
32. Ethics Committee of the Society of Critical Care Medicine. Recommendations for end-of-life care in the intensive care unit: the Ethics Committee of the Society of Critical Care Medicine. Crit Care Med 2001;29:2332–2348.
33. Prendergast TJ. Resolving conflicts in end-of-life care. New Horizons 1997;5:62–71.
34. Fisher R, Ury W, Patton B. Getting to Yes: Negotiating Agreement Without Giving In, 2nd rev. ed. Viking Penguin Books, New York: 1991.
35. Fins JJ, Solomon MZ. Communication in intensive care settings: the challenge of futility disputes. Crit Care Med 2001;29 Suppl:N10–N15.
36. Orr RD, deLeon D. The role of the clinical ethicist in conflict resolution. J Clin Ethics 2000;11:21–30.
37. West MB, Gibson JM. Facilitating medical ethics case review: what ethics committees can learn from mediation and facilitation techniques. Cambridge Q Healthcare Ethics 1992;1: 63–74.
38. Jurchak M. Report of a study to examine the process of ethics case consultation. J Clin Ethics 2000;11:49–55.
39. Tomlinson T, Czlonka D. Futility and hospital policy. Hastings Cent Rep 1995;25(3):28–35.
40. Lundberg GD. American health care system management objectives. The aura of inevitability becomes incarnate. JAMA 1993;269:2554,2555.
41. Society of Critical Care Medicine Ethics Committee. Consensus statement of the Society of Critical Care Medicine's Ethics Committee regarding futile and other possibly inadvisable treatments. Crit Care Med 1997;25:887–891.
42. Schneiderman LJ, Capron AM. How can hospital futility policies contribute to establishing standards of practice? Cambridge Q Healthcare Ethics 2000;9:524–531.
43. American Medical Association Council on Ethical and Judicial Affairs. Medical futility in end-of-life care: report of the Council on Ethical and Judicial Affairs. JAMA 1999;281: 937–941.
44. Spielman B. Collective decisions about medical futility. J Law Med Ethics 1994;22:152–160.
45. Halevy A, Brody BA. A multi-institution collaborative policy on medical futility. JAMA 1996;276:571–574.
46. Bay Area Network of Ethics Committees (BANEC) Nonbeneficial Treatment Working Group. Nonbeneficial or futile medical treatment: conflict resolution guidelines for the San Francisco Bay Area. West J Med 1999;170:287–290.
47. Fine RL. The Texas Advance Directives Act of 1999: politics and reality. HEC Forum 2001;13:59–81.
48. Fine RL, Mayo TW. Resolution of futility by due process: early experience with the Texas Advance Directives Act. Ann Intern Med 2003;138:743–746.
49. Menikoff J. Demanded medical care. Ariz St Law J 1998;30: 1091–1126.
50. Annas GJ. Asking the courts to set the standards of emergency care – the case of Baby K. N Engl J Med 1994;330:1542–1545.
51. Schneiderman LJ, Faber-Langendoen K, Jecker NS. Beyond futility to an ethic of care. Am J Med 1994;96:110–114.