

EDITORIAL

High Technology Near the End of Life: Setting Limits

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High technology interventions near the end of life exact a high cost both in human and economic terms. Breathtaking advances in cardiology have helped to prolong life and improve its quality for many. For some, it has transformed the process of dying into a medical nightmare. The "do everything possible" attitude that prevailed during the past few decades is both inhumane and wasteful. In contrast, in the new era of managed care with its focus on profit, a well meaning physician may become suspect whenever he recommends against a medical intervention that he deems to be futile. More than ever before, there is a pressing need to develop rational guidelines for end of life medical interventions to ensure primacy of patients' best interests, protect the integrity of the doctor-patient relationship and affirm the duty of the medical establishment toward society at large. This weighty issue must not be relinquished to medical ethicists, health care alliances or the courts. It is the domain of physicians and the public at large. *Medical futility* should be defined as a treatment unlikely to affect the course of illness or that which has failed to achieve its desired

effects. Rational guidelines for cardiopulmonary resuscitation and do not resuscitate orders should be formulated for both in-hospital and out of hospital victims of cardiac arrest. These guidelines need to be developed through a process similar to those for the treatment of unstable angina, with involvement from all relevant medical specialties. Proposed guidelines must be negotiated, reviewed and ratified by the lay public. Appropriate legislation is necessary to establish the framework and policies to carry out agreed on recommendations. The focus of the "living will" should change so that it covers the last chapter of life rather than its terminal phase. The document should serve to express the person's wishes regarding specific medical interventions when the quality of life is seriously diminished beyond what is uniquely desirable for the particular patient. Living wills must be comprehensive, clear and specific. They must be honored. The Uniform Health Decisions Act, now pending legislation, should enhance the utility of the living will.

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Ascalapius taught that medicine is for those who were healthy in their nature but were suffering from a specific disease: he rid them of it . . . then ordered them to live as usual . . . for those, however, whose bodies were always in a state of inner sickness, he did not attempt to prescribe a regimen . . . to make their life a prolonged misery . . . medicine was not intended for them and they should not be treated even if they were richer than Midas

—Plato, *Republic*

Managed Care and the Question of Medical Futility—Who Decides?

Contemporary wisdom has it that some form or other of managed care will dominate the health care "market" in the foreseeable future (1-3). Cost cutting is managed care's relentless focus and limiting treatment options its organizing principle. Economic data show that 10% of all health care expenditures is spent during the last year of life, and a significant proportion of these expenditures is wasted on medical care that is deemed futile or of marginal utility (4-6)—a desirable prey for cost cutting.

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Even though the foregoing argument may appear to be a logical conclusion, the concept of futility remains extremely complex (7,8). Ethicists have claimed this question to be in their domain. But there is precious little consensus among leading ethicists regarding what constitutes medical futility. Similarly, cases that were brought for court review because of end of life treatment disputes were ruled on the basis of unique technicalities in a case by case basis. Therefore, court rulings were often discordant, conflicting, confusing or incomplete (9). Similarly, despite repeated warnings from economists that the economy cannot sustain the present high technology-driven wasteful terminal care, politicians are attempting to tackle this problem through a backdoor approach by which they have relinquished the whole issue to "market forces" (10-17). Should an issue as grave and complex as the care of the dying be left to a heartless business machine whose preoccupation is solely the bottom line?

In many European countries, particularly Scandinavia, substantial savings have been realized by reducing the percentage of patients dying in hospitals to close to 50% (18). Contrast this with an 80% estimate in the United States. In this article, we will review the complex and often vexing aspects of high technology interventions near the end of life. We will propose, for the sake of debate, a formula for dealing with it.

The cost of dying in the United States is enormous. For the 6% or so of Medicare recipients who die each year, 50% of the total cost of health care is spent during the last 6 months of life.

40% for medical care during the last 2 months, and substantially 30% of total Medical expenditures cover the last month of life (4-6). Not surprisingly, Victor Fuchs, one of America's leading health care economists predicted that "one of the biggest challenges facing policy makers for the next century will be how to strike an appropriate balance between care for the dying and health services for the rest of the population" (12). However, another leading authority, argues that end of life expenditures are not growing disproportionately and that cost savings due to changes in practice at the end of life are not likely to be substantial (13). These estimates were derived mostly from treatment of terminally ill cancer patients. They do not take into account potential savings if more dying patients are cared for at home rather than in a hospital setting.

In the discipline of cardiology, the past three decades have witnessed technologic advances in diagnosis and treatment deemed inconceivable to earlier specialists; open heart surgery, cardiopulmonary resuscitation, life-sustaining devices, implantable cardioverter-defibrillator, cardiac pacing, sophisticated means of cardiac imaging, interventional cardiology and therapeutic modalities for hypertension, angina, heart failure and hyperlipidemia. According to one estimate, a good 80% of technologic advances apply to people past their fifth decade (16-17). These technologic advances have brought longer and healthier lives for many. At the same time, for some, they have enabled the sustenance of life beyond its reasonable limits; hoards of individuals are sustained in totally disabled bodies or in an unconscious or mindless state at an enormous cost to individuals, families and society (19,20). These unfortunate outcomes result from the new standard of medical care, which tests the endurance limits of various organs until the inevitable end. The fee for service system that compensates physicians for expensive interventions has been blamed for much of the waste. Unrealistic patient and family demands, fear of litigation and a passion for technology no doubt have contributed to the explosion of health care costs. Regardless of the reasons, the pace of technologic advances has exceeded society's ability to regulate its use at all levels of care, particularly with regard to terminally ill patients, a pace that can no longer be sustained. But where should the practicing cardiologist look for the much needed guidance in negotiating the difficulties of medical care when life has approached its close?

Conflicting Signals From Medical Ethicists

Foremost among the difficulties attended in the care of a dying patient is that the definition of death has changed: Before 1960, death occurred with the cessation of flow of vital fluids, as with cardiac or respiratory arrest, or both. The wide application of cardiopulmonary resuscitation in the early 1960s rendered obsolete the old definition of death; cardiopulmonary arrest has become a treatable condition (21-23). In the search for a new definition of death, debate focused on whether the whole-brain (including brain stem) death or higher brain death (with permanent loss of consciousness and cognition) definition should be adopted. The Harvard report

of 1969 (24) supported the whole-brain standard, and this definition was adopted by the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research in 1981 (25). The Commission further advised that all U.S. courts adopt this new definition to guide legal conflicts resolution. The newly adopted whole-brain definition of death left the medical community with a large number of patients who have irretrievably lost upper brain function after cardiopulmonary resuscitation, multiple brain infarcts or extensive head injury but who are alive by virtue of persistent vegetative brain stem functions and with the aid of artificial nutrition and assisted ventilation. These unfortunates are legally alive and are entitled to the right to be protected even though they have lost all ability to reject their fate. Of note is that the whole-brain definition has been challenged recently on philosophic and biologic grounds in favor of a higher brain definition (26-28). This issue is far from being settled, however, and the debate is expected to escalate in the future.

The matter of medical futility is made even more difficult by the lack of consensus among leading medical ethicists (29-35). Wide differences of opinion still exist concerning the controversial subject of how to define futility of medical treatment. Futility is defined by some as care that has failed at least 100 consecutive times previously (29). Others advise that useless medical care should not be withheld until other mitigating circumstances have been satisfied (34). Some experts go so far as to claim that the principle of autonomy and appeal to justice entitles a dying person to forms of treatment that may be deemed inappropriate on scientific medical grounds (33). Others claim that physicians cannot and must not be allowed to make the determination about medical futility (32). Yet some ethicists go as far as accusing the medical community for not doing enough interventions near the end of life (31-36). On the other extreme, leading authorities, such as Callahan of the Hasting's Institute, feel strongly that age itself should be considered in the application of high technology interventions, claiming, as an example, that aortocoronary bypass surgery is not suitable for patients >70 years old (31,37).

Similarly, the decision not to resuscitate has been shrouded by confusion and littered by contradicting medical, ethical and legal pronouncements (38). In the early 1970s, the medical establishment was engaged in an effort to define the indications for cardiopulmonary resuscitation, dealing with the problem from a prerogative therapeutic point of view (39). These efforts were preempted in 1976, when the Massachusetts General Hospital medical ethics committee published its recommendations about do not resuscitate (DNR) orders in the *New England Journal of Medicine* (40). The proposed set of recommendations took DNR away from the realm of whether resuscitation is deemed appropriate on medical grounds. Instead, resuscitation became established as the proper medical approach for all patients (implied consent) unless otherwise clearly articulated by the treating physician after appropriate consultation with other physicians not involved in the care of

the patient and only with the consent of the patient (if competent) as well as all relevant family members.

Many hospitals have since developed their own DNR guidelines (41). However, at present there is no consistent, universal policy guiding the rational selective application of DNR despite several recent outcome research data of in-hospital and out of hospital resuscitation (42-50). Furthermore, studies showed that when appropriately informed about the outcome of resuscitation, the majority of elderly patients opt for DNR orders (46), not so when they are not fully informed about the possible outcome of resuscitation. Rational universal resuscitation guidelines that take into account recent scientific data about resuscitation outcomes and the prevailing attitudes of well informed citizens are sorely needed.

The Courts and End of Life Issues

Conflicting, contradictory, incomplete and occasionally confusing best describe various court decisions regarding end of life issues. Guided (or misguided) by a whole-brain definition of death limited to the cessation of brain stem function, as well as lack of uniformity in state laws and influenced by specific sets of circumstances, the courts have handed down decisions based on very narrow interpretations of the law. For example, on the one hand, the court upheld the mother's request to discontinue artificial life support from the comatose Ann Quinlan: In so doing, the New Jersey Court supported the mother's request as a substitute (substituted judgment standard) of the comatose patient (51). On the other hand, the U.S. Supreme Court denied a similar request from the parents of Nancy Cruzan of Missouri on the basis that the State of Missouri requires the more stringent "clear and convincing evidence," which demands unequivocal proof that the parent's request to terminate nutrition and hydration conformed to the patient's own wishes (52). Also, whereas one court ruled to withhold a potentially curative treatment for leukemia from an institutionalized, mentally retarded Joseph Saikewicz on the basis that the treatment might impose unnecessary inconvenience on the patient (53), another court ruled to continue ventilator support of an 86-year old, permanently comatose Helga Wanglie of Minnesota against physician advice (37). In another case, one court ruled to uphold DNR orders for the senile Shirley Dennerstein, who had generalized atherosclerosis with multiple myocardial and cerebral infarctions (54), whereas another court denied a DNR order for a Georgia child with extensive degenerative central nervous system disorder and uncontrollable epilepsy, even though one of the parents agreed with the treating physician that the child's condition was hopeless (55). In each case, the court ruled against the advice of the treating physician.

The ultimate in ambiguity is exemplified by the court decision regarding the anencephalic Baby K of Fairfax, Virginia (56). Based on the testimony from one of the leading U.S. experts in theoretical medical ethics, the court ruled that anencephaly is a quality of life issue related to one form of medical disability that is protected by the "Americans with

Disabilities Act" and that maintaining an anencephalic child on a ventilator should not be construed as futile care. Baby K has been maintained in a "never to become conscious state" for >2 years. In another perplexing case, the New York Court ruled against letting a terminally ill patient with acquired immune deficiency syndrome (AIDS) die of pneumonia despite the patient's expressed wishes ("living will"). The Court deemed that although AIDS was terminal and irreversible, pneumonia is a reversible condition that must therefore be treated (57).

The Limited Utility of "Living Will" and Patient Self-Determination Act

The Euthanasia Society of America was founded in the 1960s in response to the public's disdain for the idea that enslavement by high technology of permanently disabled bodies, often without a mind, is a life worth living. The "living will" was the brainchild of the founder of the society, intended to preserve one's dignity when death is near and inevitable (58). The pioneer living will, proposed in 1969, stated "if the situation should arise in which there is no reasonable expectation of my recovery from physical or mental disability, I request that I be allowed to die." This original living will document, noted for its brevity and simplicity, was adopted by many citizens. Unfortunately the document lacked specificity and was deemed to be too ambiguous by lawyers, physicians and ethicists and was soon replaced by the more "legally correct" documents of today. After the California natural death act of 1976, other states adopted similar legislation allowing citizens to execute advance directives to guide medical treatment near the end of life (59). More recent advance directive legislation in many states provides for the appointment of a surrogate with a durable power of attorney for medical care decisions in the case of incompetence or disability (60,61). At present, all states have one form or another of advance directive legislation and >30 states have proxy statutes (62).

Advance directives in their present form suffer from serious shortcomings. Generally, these are legal documents drafted by lawyers for interpretation by the courts. The documents are impersonal, written in legal jargon and often intimidating to the average citizen. Also, typically, "legally correct" forms of the living will apply only in extremis, when treatment is deemed futile and death is imminent (generally interpreted as death expected to occur in 2 weeks, with or without treatment). Living wills are not entirely binding to the medical profession, and surrogate decisions should be adopted only if they conform to the best judgment of the treating physician (63). Surrogate decisions are often tainted by feelings of guilt, love, fear of loss or self-gain (64). Also, living wills are often neglected (or not found) at the time of need. No wonder that recent reports have shown that the living will in its present form is virtually useless in guiding cardiopulmonary resuscitation and other interventions near the end of life (65,66).

In a mobile society such as the United States, lack of

uniformity and portability of advance directives from state to state has proved an impediment to the utility of the living will as a guide to the withholding or withdrawing of treatment near the end of life. Similarly, the Patient Self-Determination Act (PSDA) legislation was enacted in 1990 by the U.S. Congress in an attempt to curb unwanted high technology interventions for the terminally ill by advising patients about their right to refuse treatment and of the consequences of planned interventions at the time of hospital admission (67). Not unexpectedly, PSDA legislation had little or no demonstrable effect on the utilization of high technology procedures before death (68).

Evolving Trends

Notwithstanding the present discourse, several areas of agreement seem to be evolving among ethicists and legal scholars (69). For example, a consensus is developing that considers artificial nutrition and hydration equivalent to other medical interventions (70,71). Also, there is general agreement that there are no ethical grounds for differentiating between the withholding or withdrawal of treatment once medical futility is established and that physicians are under no obligation to provide treatment that is deemed futile by reasonable medical standards (72-74). It must be emphasized that issues of feeding and hydration and the withdrawal of medical interventions are still problematic for some ethnic groups because of religious or cultural imperatives (75,76). Furthermore, there has been an increasing trend, in more recent court rulings (far from unanimous), for courts to apply the "patient's best interest" standard to guide medical treatment in an incompetent or unconscious patient (69-74). This standard is much less stringent than the subjective standard requiring "clear and convincing evidence." More important, although infrequently emphasized, no physician has ever been indicted, let alone convicted, for withholding or withdrawing from a terminally ill patient a medical treatment that is deemed useless by rational competent medical standards (72). On the contrary, courts have repeatedly advised that complex medical decisions related to terminal illness are matters for the medical establishment (and not for the courts) to resolve in accordance with established medical protocols (51,54,73,74). Recent recommendations from the American and British Medical Associations regarding persistent vegetative state are in harmony with this trend (77,78). Also, the recent passage of the Uniform Health Care Decisions Act (approved by the Uniform Law Commissioners in August 1993 and approved by the American Bar Association in February 1994) should enable the replacement of current living wills statutes by a single statute that applies to all American states (79). The overriding objective of the new act is to facilitate the use of advance directives and to make the patient's wishes binding to physicians.

Most important, the rapid expansion of medical knowledge about outcomes of various interventions has provided cardiologists with a great deal of information about the role of various diagnostic interventions and treatment modalities in the management of patients with cardiac disease (80,81). More and

more the choice of a diagnostic procedure or a specific treatment depends on hard data rather than the cardiologist's personal preference. The decade of the 1990s may prove to be the decade when the once unlimited enthusiasm about high technology that characterized the 1980s is tempered by outcome data gained from experience that have spanned several years and hundreds of thousands of procedures.

Several attempts have been undertaken to establish priorities for high technology treatment in an intensive care environment. The Brookings Institute Report (82) on rationing of intensive care is but one serious rational approach to the problem. A computer-assisted program was developed and subsequently refined utilizing the Glasgow APACHE SCALE to consider acute physiologic and chronic health states (83). Similarly, the Ryjadh Intensive Care Program (RICP), developed in England, was touted by many as reliable in predicting futility in the intensive care unit but criticized by some; the program has a margin of error of 5%, which would not be acceptable by conventional U.S. standards of care (84). Criteria for priority of intensive and terminal health care continue to evolve slowly (85). The Oregon model of state-supported health care is a notable example (86). In the Oregon Medicaid model, health care priorities are set based on 800 disorders. Pneumonia, tuberculosis, peritonitis, appendicitis and hernia with obstruction topped the list. Kidney cysts, terminal AIDS, chronic pancreatitis and extremely low birth weight earned the lowest priority. These priorities were established after extensive open public debate. Hospice care has replaced high technology care for many categories of terminal illness and end-stage disease in the Oregon model.

Managed Care—the Solution?

Today's cardiologists find themselves caught in a dilemma: On the one hand, advances in scientific knowledge and technology enable them to perform or advocate improved outcome procedures to sicker and older patients (87-90). On the other hand, new pressures to limit the number of costly procedures are imposed on physicians from a managed care environment (91,92). Although the premise of managed care is predicated solely on cost containment, administrators of managed care have skillfully relinquished decisions regarding medical care guidelines to health care professionals. At the same time, they have deliberately placed the physicians' economic interests at odds with expensive care. To put it bluntly, the fewer procedures the doctor performs, the more the company profits and the bigger the doctor's share in these profits. This trend represents a 180° shift from the fee for service paradigm of yesteryear. Whether the main driving force to do more for patients was due to altruistic motives or physician self-interest did not seem to matter; these two powerful forces were in concordance. In the new environment, the altruistic component of medicine, by which the physician viewed himself or herself as the patient's advocate regardless of cost, will no doubt be sacrificed at the altar of cost-effectiveness, which, masquerading as prudence, places the treating cardiologist's

financial interests at odds with the patient's health needs. The inevitable consequence will no doubt lead to the temptation to sacrifice the patient's best interests—a very disturbing proposition. Although the majority of cardiologists are expected to adhere to the highest standards of honesty and professional integrity, the fraudulent few will render the most well meaning physician suspect when he or she recommends against intervention, even though it has been deemed to be medically futile.

Is There a More Rational Solution?

Issues related to death, permanent infirmity, hopeless dependence and indignity are riddled with religious, cultural, ethnic, racial and economic complexities and charged with a multitude of emotions and passions that go beyond the realm of organ-specific medical practice, such as cardiology. We proposed a three-pronged approach to dealing with issues of use of high technology near the end of life:

1. the development of professional practice guidelines for limiting or withholding treatment, including cardiopulmonary resuscitation;
2. a lay public commission to study, make recommendations, disseminate information and allocate priorities in the management of patients with end-stage disease; and
3. a legislative process that transforms public sentiments into public policies.

The recently developed clinical practice guidelines on unstable angina by the Agency for Health Care Policy (AHCPR) and National Heart, Lung, and Blood Institute (NHLBI) is a model for emerging clinical practice guidelines (93). However, in the case of end of life issues, not only organ-specific specialty organizations (brain, heart, lung, kidney), but also other specialties (infectious disease, oncology, geriatric medicine, emergency room specialists, intensivists and primary medical and surgical specialties) should be involved. It may seem an impossible task to assemble representatives from all these disciplines to review all relevant literature and develop universally applicable practice guidelines; however, the task is worth the effort. Review by the public is absolutely essential for these guidelines to become widely applicable as well as acceptable to patients and potential patients. Lessons can be learned from many western countries that have established committees to review and guide the adoption and implementation of community-accepted standards of care near the end of life. The Danish Council on Ethics is such a model (94). Established in 1988 to guide the Danish Parliament in sorting out the difficult ethical and legal issues attendant on terminal care and other health care dilemmas, the Council is more grass roots than any other committee in the world. It is composed of 17 members with nearly equal male and female representation. The Council's public education efforts are far reaching and encompass a wide range of ethical issues dealing with public health. For example, it is this Council that recommended that irreversible cessation of higher brain function be reviewed as

the end of life. The Council also oversees public education in health-related and end of life care issues, including television debates and the production of health education materials for schoolchildren and the public. Guided by public opinion polls, televised medical discussions and open debates, the Council recommends new health-related legislation to the Danish Parliament (95). In the United States, the Oregon model for established health priorities can be viewed as the brainchild of a deliberative rational public process, leading to reasonable political action. Likewise, few health maintenance organizations have allowed meaningful public involvement in establishing health care strategies. Group Health Cooperative of Puget Sound in Seattle, Washington, is one notable example (96).

The time has come for a national commission, properly selected from community leaders, to be empowered to develop goals and procedures for treatment near the end of life. Let it be named the Quinlan Commission in honor of Karen Ann Quinlan, whose mother was the first to challenge the high technology maintenance of unconscious existence. The Commission should be relatively independent and broadly representative but should not be seen as representative of any particular special interest group. Members should be appointed in a manner similar to that for Justices of the Supreme Court. The Commission must be insulated from political pressure or interference by lobbyists. It may work with small groups that interact within medical authorities, legal scholars, ethics specialists, economists, theologians representing dominant religions and scientists. The Commission will have access to opinion polls, health statistics and other pertinent information. The Commission should develop substitute judgment standards for care of the incompetent and the terminally ill. The Commission should be charged with the duty to recommend, review and modify health care legislation and establish priorities for medical care, including home and hospice care. In addition, the Commission should establish strategies and develop instructional materials for dissemination of information and education of the public at large. The Commission is expected to propose laws necessary to ensure uniformity, access and portability of advance directives as well as provide the guarantees that the patient's expressed wishes are carried out.

Advance directive legislation deserves total overhauling. The focus of the living will should not be to prevent unnecessary treatment in extremis when death is imminent and unavoidable; rather, the living will should serve to express the individual's own wishes in planning medical decisions for the last chapter of life. The living will should address treatment options (including cardiopulmonary resuscitation) when the patient becomes incompetent or incapable of making such decisions because of severe dementia; crippling stroke; end-stage organ failure; disseminated, unresponsive cancer; and advanced resistant infection, including AIDS.

Under these circumstances, many individuals may choose not to interfere in the process of dying. Their values and beliefs lead them to prefer death to a much diminished life. One of us

(L.B.) has composed a simplified living will and a workbook covering various medical scenarios common to the last chapter of life (97). The document is written in plain English void of legal jargon. Individuals are encouraged to discuss treatment options under these specific scenarios with their family, physicians and would-be surrogates. This or a similar document should be adopted for universal use.

What makes this proposal even more timely is the pending Uniform Health Decisions Act. This legislation was proposed by the Uniform Law Commissioners in August 1993 and was ratified by the American Bar Association in February 1994. The legislation should enhance the utility, portability and relevance of the living will by making advance directive legislation uniform among all American states.

A central registry should be established to enable physicians and paraprofessional personnel immediate access to the latest patient-expressed wishes. Also, legislation is needed that requires treating physicians to honor the spirit of patient's directives. Only then can we expect the living will to fulfill the patient's wishes when life approaches its close (98).

Conclusions

As health care delivery in America is transformed from a fee for service to a managed care formula, cost-conscious guidelines for care are inevitable. Futile medical care administered to hopelessly ill patients accounts for an annual total waste of \$30 billion by conservative estimates and for as much as \$100 billion by others. Nowhere is the heavy hand of managed care likely to be felt as in the application of high technology medicine near the end of life.

Whereas advances in medical technology have enabled cardiologists to extend complex interventional and surgical services to older and sicker patients at acceptable mortality and morbidity rates, the managed care environment, motivated solely by financial profit, will limit interventions deemed of marginal utility. The appetite for cutting medical costs, if unchecked, promises at best to stifle medical progress by curbing the application of new technologies and at worst to corrupt some members of the medical profession into limiting patient care to further their own financial interests. The danger of unilaterally rationing medical care near the end of life, if unregulated and well monitored, could prove extremely costly both to society and to the medical establishment by undermining the trust placed by patients in their treating physicians.

As difficult as it may seem, and despite obvious complexities and ambiguities, practice guidelines, dealing with end-stage disease and medical treatment of the terminally ill patient is vital if we are to maintain a standard of care that is rational, redeeming and worthwhile. The example set forth in establishing guidelines for the treatment of unstable angina should be the reference standard for all other emerging guidelines of medical care.

The medical profession and U.S. Courts badly need guidance in how to deal with complex, emotionally charged, controversial issues near the end of life, such as in the cases of

the \$1 million, ill-fated surgery for the Lakersburg Siamese twins; the anencephalic Baby K maintained by assisted ventilation for >2 years; and the 86-year old persistently comatose Helga Wanglie maintained on assisted ventilation. Who will decide the fate of similar patients in a managed care environment? Will the physician act in the best interests of the big company whose only motive is profit, only to find himself or herself at the mercy of the law, facing the consequences of his actions? The medical establishment cannot afford to endorse such an arrangement, which is fair neither to patient nor doctor. In the present article, we propose a mechanism by which guidelines for medical futility and application of cardiopulmonary resuscitation are developed by the medical establishment, negotiated with the public and transformed into public policy. Suggestions to enhance the utility and relevance of the living will are provided.

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