

Summer 1981

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TOWARDS A STATUTORY DEFINITION OF DEATH IN ILLINOIS

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INTRODUCTION

The condition of death traditionally could be seen and described in concrete terms by the average observer, layman or physician. In the vast majority of cases, it is still determinable by reference to visible and unambiguous signs. However, more and more frequently medical intervention renders the presence or absence of respiration and pulse meaningless as proof of life or death. The heart can be electrically managed, and breathing can be sustained artificially.¹ Nutrition, enzyme balance, and other metabolic functions can be monitored and maintained. In such circumstances, the status of death is less clear. Medically dead individuals remain legally alive under the traditional definition of death. This dichotomy between the law and medicine in some cases gives rise to a charade in which medical resources are wasted and family grief prolonged because no physician will risk the legal consequences of removing life support systems from a person who is still legally alive, although medically dead.²

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The authors would like to express their gratitude to Thomas J. Baffes, M.D. who graciously assisted in the writing of this article.

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1. 3 M. HOUTS & I. HAUT, COURTROOM MEDICINE 1-8 (1980).
2. The problems raised in various circumstances have not gone without comment by both the medical and the legal communities. See, e.g., DOWNING, EUTHANASIA AND THE RIGHT TO DEATH (1969); WILLIAMS, THE SANCTITY OF HUMAN LIFE AND THE CRIMINAL LAW (1957); Appel, *Ethical and Legal Questions Posed by Recent Advances in Medicine*, 205 J.A.M.A. 513 (1968); Claypool, *The Family Deals with Death*, 27 BAYLOR L. REV. 34 (1975); Foreman, *The Physician's Criminal Liability for the Practice of Euthanasia*, 27 BAYLOR L. REV. 54 (1975); Gurney, *Is There a Right to Die?—A Study of the Law of Euthanasia*, 3 CUM.-SAM. L. REV. 235 (1972); Sharpe & Hargest, *Lifesaving Treatment for Unwilling Patients*, 36 FORDHAM L. REV. 695 (1968); Comment, *The Right to Die*, 7 HOUS. L. REV. 654 (1970); Note, *The Time of Death—A Legal, Ethical and Medical Dilemma*, 18 CATH. LAW 243 (1972).

A recent incident in Illinois illustrates at least one aspect of the problem. On May 31, 1980, at 12:05 p.m., a child was pronounced dead at a Rockford hospital after he suffered cardiac arrest at 11:45 a.m. and failed to respond to resuscitation efforts.³ Although the child was *pronounced* dead at that time, in the opinion of the physicians involved in his case, he had actually died two months earlier, shortly after he was pulled from a fire in his home.⁴ An examination at that time by an emergency room physician revealed no sign of cerebral or brain stem activity.⁵ A second examination by another doctor confirmed these findings.⁶ Under current Illinois law, however, the youngster was dead only if his organs were to be harvested for transplant purposes. For all other purposes he was alive.⁷

THE MEDICAL DEFINITION

Death as a Process

The law has failed to recognize and appreciate that there is no specific instant in time when death positively occurs, a fact that the biological sciences have long accepted as a given.⁸ What the common law recognizes as death—the cessation of respiration and circulation⁹—is biologically only the first step in a process of death. Approximately four to ten minutes after respiration ceases the brain will begin to die unless it is artificially supplied with oxygen. If only the cerebral cortex is destroyed, there will be a permanent loss of consciousness, but not necessarily a loss of other vital functions. Even when the lower centers of the brain are irreversibly destroyed, it may still be

3. Sunday Register Star, June 1, 1980, at 1, col. 4.

4. *Id.*

5. *In re* Shane Michael Meyer, Circuit Court of the 17th Judicial Circuit, Winnebago County, Illinois, No. J-7978, Affidavit of John K. Sturman, Jr., M.D., dated May 28, 1980.

6. *Id.*

7. Uniform Anatomical Gift Act, ILL. REV. STAT. ch. 110 1/2, §§ 301-11 (1979). This Act recognized brain death as death, § 302(b), but only for purposes of the Act.

8. See Morison, *Death: Process or Event?* 173 SCI. 694 (1970); Kass, *Death as an Event: A Commentary on Robert Morison*, 173 SCI. 698 (1970). See also Wasmuth, *The Medical, Legal, and Ethical Considerations of Human Organ Transplantations*, 11 WM. & MARY L. REV. 636 (1970).

9. Black's Law Dictionary recites the most common definition of "death": "a total stoppage of the circulation of the blood, and a cessation of . . . functions consequent thereon, such as respiration. . . ." BLACK'S LAW DICTIONARY 488 (4th ed. 1968). The newest edition of Black's recognizes the recent changes in the definition of death. "The cessation of life; permanent cessations of all vital functions and signs. Numerous states have enacted statutory definitions of death which include brain-related criteria." BLACK'S LAW DICTIONARY 360 (5th ed. 1979).

possible to maintain cardiovascular function through mechanical means. The recognition and growing understanding of each of these stages of brain death and their relationship have rendered the common law definition of death worse than meaningless in many contexts.

The problem would perhaps be more easily addressed if there at least were agreement within the medical community about what constitutes the status of death. Unfortunately, this is not the case. As noted in the *Journal of the American Medical Association*, "the law makes the *assumption* that the medical criteria for determining death are settled and not in doubt among physicians."¹⁰ The problem of defining death has been described as follows:

In the first place, death cannot be defined as the loss of all vital functions because tissues removed from the body can be kept alive in cultures for possibly hundreds of years. Secondly, many people are now maintained in a sort of twilight state by the use of machines which do the work of their lungs or their heart while they are completely unconscious. Everybody treating accident cases and neurological cases is familiar with this fact. Many of these people will never resume an independent existence away from the machine, but they can't stay on the machines forever and ever. There just aren't enough machines. There isn't the space to park these people. One has to decide therefore when to switch off the machines, and this question arises quite independently of considerations about transplants.¹¹

While the goal of any definition of brain death or simply of death is to eliminate uncertainty, there are substantial differences in specific criteria suggested for its diagnosis, as the following examples demonstrate.

A 1971 clinical study¹² of twenty patients produced these criteria of brain death: unresponsiveness to painful and auditory stimuli; absence of spontaneous movement; absence of spontaneous respiration; fixed, dilated, equal pupils; lack of response to ice-water calorics, to intravenous administration of CN stimulants or to photic stimulation, and an isoelectric EEG. A Swedish study added the criterion of arteriography.¹³ A Harvard Committee formulated the following criteria in 1968: unrespon-

10. *A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death*, 205 J.A.M.A. 337 (1968).

11. ETHICS IN MEDICAL PROGRESS: WITH SPECIAL REFERENCE TO TRANSPLANTATION 71 (G. Wolstenholme & M. O'Connor eds. 1966).

12. Korien & Maccario, *On the Diagnoses of Cerebral Death*, 2 CLINICAL ELECTROENCEPHALOGRAPHY 103-04 (1971).

13. Ingvar, *Sammanfattning av ett symposium*, 59 LAKARTIDNINGEN 3804 (1972).

sitivity and unreceptivity; no spontaneous movement or breathing observed for at least one hour; no reflexes; isoelectric EEG.¹⁴

The United States Collaborative Study of Cerebral Death¹⁵ proposed that brain death be declared when the patient is in a coma, is apneic, has dilated pupils, shows no cephalic reflexes, and demonstrates an isoelectric EEG. All of these criteria must be present for at least thirty minutes at least six hours after the onset of coma and apnea. In addition, the committee suggested absence of cerebral blood flow as a confirmatory test.

A final set of criteria that must be considered is that established by the United States Navy in 1974 for irreversible coma: (1) Nature and duration of coma, etiology of coma presumptive of permanent damage to brain; depressant drugs and hypothermia must be excluded; coma must be observed for at least thirteen hours. (2) Absence of cortical function; patient must be unresponsive to all externally applied stimuli except for simple spinal reflexes. Whenever possible, the EEG should be used to confirm the absence of cortical function for thirty-minute periods at least twelve hours apart. (3) Absence of brain stem function; pupils must be fixed in midpoint or dilated position and remain unresponsive to bright light. Absence of respiration during a three-minute period off the respirator, observed on two occasions at least one hour apart. (4) Minimum time period required prior to determination of death is thirteen hours.¹⁶

The above discussion, by no means exhaustive, demonstrates the concern in the medical community for diagnostic certainty when dealing with the concept of brain death. It also illustrates the variety of criteria advanced to achieve such certainty.

THE LEGAL DEFINITIONS

The law is no less confused than medicine about the definition of brain death. Consider the following hypothetical homicide cases. In jurisdiction *A*, the driver of a car is charged with manslaughter and drunken driving after the death of an accident victim. The victim's heart is harvested for transplant after a determination of cerebral death, although the cardiorespiratory system has been maintained by machine until the surgery. The trial judge accepts the defense contention that under the

14. *A Definition of Irreversible Coma: Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death*, 205 J.A.M.A. 337 (1968).

15. 237 J.A.M.A. 982 (1976).

16. U.S. DEPT. OF NAVY, DETERMINATION OF BRAIN DEATH, Bumed Instruction 5360.24 (April 15, 1974).

traditional definition¹⁷ death is the total cessation of heartbeat, respiration, and other vital functions, regardless of the diagnostic criteria for a determination of brain death.¹⁸ Because the patient was still "alive" until the transplant surgery, the manslaughter charge is dismissed.

The opposite result is reached in jurisdiction *B*. The defendant is charged with fatally shooting the victim. Despite artificial maintenance of vital functions prior to transplant surgery, the judge charges the jury to accept irreversible cessation of brain function as a definition of death. The verdict is for conviction.¹⁹

The Physician's Dilemma

A problem for the physician called upon to determine the fact of death is the possibility of civil or criminal liability for acting upon that determination. For example, in *Tucker v. Lower*²⁰ the brother of a decedent brought an action against defendant doctors alleging that they had removed the decedent's heart for transplant purposes before his death. Furthermore, no consent for the transplant had been given. Plaintiff asserted that at the time of the surgery the decedent "maintained vital signs of life, that is . . . normal body temperature, normal pulse, normal blood pressure and normal rate of respiration."²¹

The defendants moved for summary judgment, but the trial judge denied the motions:

The function of this court is to determine the state of the law on this or any other subject according to legal precedent and principle. The courts which have had occasion to rule upon the nature of death and its timing have all decided that death occurs at a precise time, and that it is defined as the cessation of life; the ceasing to exist; a total stoppage of the circulation of the blood, and a cessation of the animal and vital functions consequent thereto such as respiration and pulsation.²²

The court adhered to "the legal concept of death" and rejected "the invitation offered by the defendants in establishing a rule of law."²³ The court ruled that the jury would be allowed to assess damages if it concluded "that the decedent's life was terminated

17. See note 9 *supra*.

18. Facts suggested by a situation in 17 AMER. MED. NEWS 2 (1974).

19. See also Hirsh, *Brain Death*, MED. TRIAL TECH. Q. 377, 388 (1975).

20. No. 2831 (Richmond, Va. L. & Eq. Ct., May 23, 1972).

21. *Id.* at 4.

22. *Id.* at 8 (citations omitted).

23. *Id.*

at a time earlier than it would have ended had all reasonable medical efforts been continued to prolong his life."²⁴

When he sent the case to the jurors, however, the judge permitted them to consider all evidence of death, including cessation of brain activity as well as cessation of breathing and heartbeat, and a verdict was returned for the defendants. Unfortunately, the discrepancy between the initial ruling and the subsequent instructions to the jury did little to resolve the legal uncertainty. In light of judicial rulings such as *Tucker*, and the general uncertainty as to the state of the law, it is little wonder that physicians will often refuse to decide that a patient has died while respiration and circulation exist, even when those functions are being maintained solely by machine.

JUDICIAL APPLICATION OF A BRAIN DEATH STANDARD

In the absence of a statute acknowledging modern medical criteria for the determination of death, a number of courts have, nevertheless, resolved the issue in favor of a brain death standard. In *Lovato v. The District Court in and for the Tenth Judicial District*,²⁵ the Colorado Supreme Court reviewed a trial court order directing a child's guardian *ad litem* to authorize the child's attending physician to discontinue life support if the physician determined that the child was dead. After hearing medical testimony²⁶ the lower court identified the major issue as the definition of death, which it defined as "that state which occurs when it is determined by a physician, based on reasonable medical standards that there is no spontaneous brain function, and either spontaneous respiratory function or spontaneous circulatory function cannot be restored by resuscitation or supportive maintenance."²⁷

24. *Id.* at 11.

25. 198 Colo. 419, 601 P.2d 1072 (1979).

26. [C]linical examinations of the child revealed the following:

[the child] had sustained multiple bruises, was completely comatose, was not breathing spontaneously, and his respiration was maintained entirely by artificial means. His heart was beating and his blood pressure was approximately 60/40. He had no spontaneous muscular movements, no reflexes, including . . . [absence of deep] tendon reflexes, and no response to even the most intense pain or other stimuli. Corneal reflexes were absent. His pupils were dilated and fixed, showing no response to light. There were no signs of involuntary physical activity such as swallowing, blinking, yawning and pharyngeal reflexes. Electroencephalogram (EEG) tests were given on August 24th, 27th and 31st. Each showed a complete lack of brain function.

601 P.2d at 1074.

27. *Id.*

On appeal the guardian argued that absent legislative action the common law definition of death should apply, and that the lower court had exceeded its jurisdiction and abused its discretion by recognizing the concept of brain death. The supreme court rejected those arguments and affirmed the lower court, holding that "[i]n the event that the common law definition of death did not include brain death in the light of present scientific knowledge, such an exclusion is no longer applicable."²⁸ As the rule of that case and the standard to be followed, the court adopted the provisions of the Uniform Brain Death Act,²⁹ as approved in 1978: "For legal and medical purposes, an individual who has sustained irreversible cessation of all functioning of the brain, including the brain stem, is dead. A determination under this section must be made in accordance with reasonable medical standards."³⁰

More recently, the Washington Supreme Court was called upon to decide on a modern definition of death. In *In re Welfare of Bowman*,³¹ the guardian *ad litem* of a five-year-old child appealed the ruling of a trial court that because the child had suffered irreversible loss of brain activity, he was "dead."³² The supreme court affirmed the lower court decision and adopted the provisions of the Uniform Determination of Death Act.³³ The *Bowman* court noted:

Adoption of this standard will alleviate concern among medical practitioners that legal liability might be imposed when life support systems are withdrawn, even though the brain is irreversibly dead and circulation and respiration will inevitably cease. It will also

28. 601 P.2d at 1075.

29. 601 P.2d 1080.

30. Uniform Brain Death Act, 12 U.L.A. § 1 (Supp. 1981).

31. 92 Wash. 2d 407, 617 P.2d 731 (1980).

32. At the time of the hearing, the medical testimony was that the child showed no brain activity, demonstrated by an isoelectric EEG, and a total absence of cerebral blood flow. There was no corneal reflex and the pupils were fixed and non-reactive to any stimuli. There were no deep tendon reflexes or other signs of brain stem activity nor responses to deep pain. There was no sign of spontaneous respiration. *Id.* at 409, 617 P.2d at 733.

33. UNIFORM DETERMINATION OF DEATH ACT SECTION 1. [Determination of Death.] An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards.

SECTION 2. [Uniformity of Construction and Application.] This Act shall be applied and construed to effectuate its general purpose to make uniform the law with respect to the subject of this Act among states enacting it.

SECTION 3. [Short Title.] This Act may be cited as the Uniform Determination of Death Act.

Uniform Determination of Death Act, 12 U.L.A. §§ 1-3 (Supp. 1981).

permit discontinuation of artificial means of life support in circumstances where even those most morally and emotionally committed to the preservation of life will not be offended. We do not address what are acceptable diagnostic tests and medical procedures for determining when brain death has occurred. It is left to the medical profession to define the acceptable practices, taking into account new knowledge of brain function and new diagnostic procedures.³⁴

One case has addressed the issue of brain death as it specifically affects the medical profession.³⁵ In that case, the New York City Health and Hospital Corporation filed suit for a declaratory judgment to permit removal of organs from brain-dead persons before the cessation of circulation. The evidence at trial demonstrated that there was an eighty-eight percent failure rate in patients receiving kidney transplants from donors whose circulation had stopped before the kidney was removed. However, the failure rate for kidney transplants removed from brain-dead persons whose circulation had not stopped was the same as the rate for transplants from live kidney donors, approximately ten to twenty percent. The court recognized that the New York Anatomical Gifts Act was designed to encourage anatomical gifts, and held that to effectuate that purpose a definition of death consistent with generally accepted medical practice should be adopted. Finally, the court urged the New York legislature to take affirmative action to provide a statewide remedy for the problem of defining death.

STATUTORY DEFINITION OF DEATH

Twenty-five state legislatures have adopted statutory provisions defining death.³⁶ Before evaluating the various statutes, the role, if any, of the public in defining death should be examined. It may be argued that the determination of death is

34. *In re Welfare of Bowman*, 92 Wash. 2d 407, 409, 617 P.2d 731, 738 (1980).

35. *New York City Health and Hosp. Corp. v. Sulsona*, 81 Misc. 1002, 367 N.Y.S.2d 686 (1975).

36. ALA. CODE § 22-31-1 (Supp. 1979); ALASKA STAT. § 09.65.120 (Supp. 1980); ARK. STAT. ANN. § 82-537 (Supp. 1979); CAL. HEALTH & SAFETY CODE § 7180 (West Supp. 1981); CONN. GEN. STAT. ANN. § 19-139i (West Supp. 1980); GA. CODE ANN. § 88-1715.1 (1979); HAWAII REV. STAT. § 327C-1 (Supp. 1979); IDAHO CODE § 54-1819 (1979); ILL. REV. STAT. ch. 110 1/2, 302 (1979); IOWA CODE § 702.8 (1979); KAN. STAT. ANN. § 77-202 (Supp. 1979); LA. CIV. CODE ANN. art. 9:111 (West Supp. 1981); MD. ANN. CODE art. 43, § 54F (1980); MICH. STAT. ANN. § 14.228(2) (1980); MONT. REV. CODES ANN. § 50-22-101 (1979); NEV. REV. STAT. 451.007 (1979); N.M. STAT. ANN. § 12-2-4 (1978); N.C. GEN. STAT. § 90-323 (Supp. 1979); OKLA. STAT. ANN. tit. 63 § 1-301 (West Supp. 1980); OR. REV. STAT. § 146.087 (1979); TENN. CODE ANN. § 53-459 (1977); TEX. REV. CIV. STAT. ANN. art. 4447t, §§ 1-3 (Vernon Supp. 1980); VA. CODE § 54-325.7 (Supp. 1980); W. VA. CODE § 16-19-1(c) (Supp. 1980); WYO. STAT. § 35-19-101 (Supp. 1980).

solely a question for medical science. This argument, however, ignores the fact that death is a process, not an event.³⁷ The decision as to which stages in that process will be defined as death is a philosophical judgment about which of the "life functions" fundamentally determine who is a living human being.³⁸

The idea that death is no longer an objective state but a philosophical judgment raises the concern that it is an arbitrary concept to be defined in whatever manner that suits society's need. The assumption inherent in this concern is that the traditional definition of death, cessation of heartbeat, is not itself arbitrary. In fact, medical science has made the traditional definition not only arbitrary, but also totally inaccurate. Every day hearts and lungs are stopped so that people may undergo open-heart surgery; these patients are kept "alive" through the miracle of the heart/lung machine. Thousands of others have been "brought back from the dead" by modern resuscitative measures. Such advances in medical science have required a redefinition of death.

The Public Policy Considerations.

To the extent that there is a policy decision to be made, that decision should be made in a public forum. The legislatures are the only forum that can establish an appropriate definition of death which is applicable in all circumstances. Although courts have attempted to resolve this issue, their decisions have failed to produce a uniform standard.³⁹ Many courts have defined death only in the specific context of the case before them, providing no guidance to the physician who must determine death in other situations. Other courts which have actually adopted new definitions of death⁴⁰ have been criticized for exceeding the proper scope of judicial action.

The scope of legislation should be governed by the dichotomy between the policy considerations in the definition of death and the purely medical consideration.⁴¹ The policy determina-

37. The process usually begins with the cessation of heartbeat and respiration, followed by the progressive death of cells and tissues due to lack of oxygen and nutrients.

38. Capron & Kass, *A Statutory Definition of the Standards for Determining Human Death: An Appraisal and a Proposal*, 121 U. PA. L. REV. 87, 94 (1972) [hereinafter cited as Capron & Kass].

39. See, e.g., *Commonwealth v. Golston*, 373 Mass. 249, 366 N.E.2d 744 (1977); *New York City Health and Hosp. Corp. v. Sulsona*, 81 Misc. 2d 1002, 367 N.Y.S.2d 686 (1975).

40. See *Lovato v. District Court*, 198 Colo. 419, 601 P.2d 1072 (1979); *In re Welfare of Bowman*, 92 Wash. 2d 407, 617 P.2d 731 (1980).

41. Capron & Kass, *supra* note 37, at 102. The authors discuss four levels of definition: (1) the basic concept or idea such as permanent cessation of

tion should be made in terms of general physiological standards for recognizing death, *i.e.*, irreversible cessation of circulation or irreversible loss of consciousness. The legislature could define specific tests or procedures for determining death, thereby resolving any question of the applicability of the standard to any individual patient. This approach would reassure the public that the standards are not arbitrarily set by the medical community, and at the same time provide the physician concerned about possible liability with a set procedure he can follow to avoid criticism. Such specificity, however, ignores the need for flexibility resulting from advances in medical science.

The Existing Statutes

Of the twenty-five state statutory provisions adopted to date,⁴² all provide a uniform definition of death except the Illinois statute, which is incorporated into the Uniform Anatomical Gifts Act: "Death means for the purposes of the Act, the irreversible cessation of total brain function, according to usual and customary standards of medical practice."⁴³

The statute is appropriately limited in scope to defining the general physiological characteristics of death, but fails to provide a definition which is applicable in all circumstances. Under the statute, a person who suffers brain death would not be considered legally dead until the decision was made that he would be an organ donor. The result of this statute is that death itself depends not upon the medical status of the patient, but upon a decision by third parties to utilize his organs for transplant.

The remaining twenty-four state legislatures have adopted more general definitions of death.⁴⁴ While the precise language varies, the statutes may be divided into three distinct categories: (1) those which supply alternative definitions of death (brain and cardiopulmonary death);⁴⁵ (2) those which only define

the integrated function of the organism; (2) general physiological standards such as irreversible cessation of spontaneous respiratory and circulatory functions or irreversible loss of spontaneous brain functions; (3) operational criteria defining what is meant by the generally physiological standards, *i.e.*, deep coma, absence of reflexes, etc.; and (4) specific tests and procedures. The article concludes that defining only the basic concept provides little or no guidance in practice. On the other hand, the operational criteria or specific tests are purely technical matters best left to the physicians.

42. See note 35 *supra*.

43. ILL. REV. STAT. ch. 110 1/2, § 302 (1979).

44. See note 35 *supra*.

45. Alabama, ALA. CODE § 22-31-1 (Supp. 1979); Alaska, ALASKA STAT. § 09.65.120 (Supp. 1980); Hawaii, HAWAII REV. STAT. § 327C-1 (Supp. 1979); Iowa, IOWA CODE § 702.8 (1979); Kansas, KAN. STAT. ANN. § 77-202 (Supp. 1979); Louisiana, LA. CIV. CODE ANN. art. 9:111 (West Supp. 1981); Maryland,

brain death;⁴⁶ and (3) those which define brain death and clearly provide that other customary means of determining death are also acceptable.⁴⁷

Alternative Definition Statutes

The most common type of statute adopts the alternative definitions approach. Kansas, the first state legislature to define death, enacted a version of this type of statute in 1970:

A person will be considered medically and legally dead if, in the opinion of a physician, based on ordinary standards of medical practice, there is the absence of spontaneous respiratory and cardiac function and, because of the disease or condition which caused, directly or indirectly, these functions to cease, or because of the passage of time since these functions ceased, attempts at resuscitation are considered hopeless; and, in this event, death will have occurred at the time these functions ceased; or

A person will be considered medically and legally dead if, in the opinion of a physician, based on ordinary standards of medical practice, there is the absence of spontaneous brain function; and if based on ordinary standards of medical practice, during reasonable attempts to either maintain or restore spontaneous circulatory or respiratory function in the absence of aforesaid brain function, it appears that further attempts at resuscitation or supportive maintenance will not succeed, death will have occurred at the time when these conditions first coincide. Death is to be pronounced before artificial means of supporting respiratory and circulatory function are terminated and before any vital organ is removed for purposes of transplantation.

These alternative definitions of death are to be utilized for all purposes in this state, including trials of civil and criminal cases, any laws to the contrary notwithstanding.⁴⁸

The complexity of the Kansas statute, and others modeled on it,⁴⁹ ignores the fact that those who must apply its standards are doctors, not attorneys. The statutory language should be

MD. ANN. CODE art. 43, § 54F (1980); Michigan, MICH. STAT. ANN. § 14.228(2) (1980); New Mexico, N.M. STAT. ANN. § 12-2-4 (1978); TEX. REV. CIV. STAT. ANN. art. 4447t, §§ 1-3 (Vernon Supp. 1980); Virginia, VA. CODE § 54-325.7 (Supp. 1980).

46. Arkansas, ARK. STAT. ANN. § 82-537 (Supp. 1979); Illinois, ILL. REV. STAT. ch. 110 1/2, § 302 (1979); Montana, MONT. REV. CODES ANN. § 50-22-101 (1979); Nevada, NEV. REV. STAT. § 451.007 (1979); Oklahoma, OKLA. STAT. ANN. tit. 63 § 1-301 (West Supp. 1980); Tennessee, TENN. CODE ANN. § 53-459 (1977); West Virginia, W. VA. CODE § 16-19-1(c) (Supp. 1980); Wyoming, WYO. STAT. § 35-19-101 (Supp. 1980).

47. California, CAL. HEALTH & SAFETY CODE § 7180 (West Supp. 1981); Georgia, GA. CODE ANN. § 88-1715.1 (1979); Idaho, IDAHO CODE § 54-1819 (1979); North Carolina, N.C. GEN. STAT. § 90-323 (Supp. 1979); Oregon, OR. REV. STAT. § 146.087 (1979).

48. KAN. STAT. ANN. § 77-202 (Supp. 1979).

49. Maryland, New Mexico, and Virginia have adopted statutes similar to the Kansas statute.

clear, concise, and devoid of "legalese." An unambiguous statute is essential to dispel the fears of physicians and hospitals of potential liability. A variation on the alternative definitions approach adopted by several states⁵⁰ provides that the brain death standard will apply only if artificial means of support preclude a determination of the cessation of respiratory and circulatory functions. The Iowa statute is typical:

Death means the condition determined by the following standard: A person will be considered dead if in the announced opinion of a physician, based on ordinary standards of medical practice, that person has experienced an irreversible cessation of spontaneous respiratory and circulatory functions. In the event that artificial means of support preclude a determination that these functions have ceased, a person will be considered dead if in the announced opinion of two physicians, based on ordinary standards of medical practice, that person has experienced an irreversible cessation of spontaneous brain functions. Death will have occurred at the time when the relevant functions ceased.⁵¹

THE BRAIN DEATH STANDARD

The two types of alternative definition statutes have been criticized in that a determination of death may be based on different criteria depending on the circumstances.⁵² While it is true that a single definition based on the *common law* definition of death is no longer sufficient, a strong argument can be made that a single *brain death* standard should be used in determining all deaths. This approach recognizes that when circulation ceases the brain cannot continue to function. The single brain death definition approach has been adopted in eight states.⁵³ The Tennessee statute is an example: "For all legal purposes, a human body, with irreversible cessation of total brain function, according to the usual customary standards of medical practice, shall be considered dead."⁵⁴

50. Alabama, ALA. CODE § 22-31-1 (Supp. 1979); Alaska, ALASKA STAT. § 09.65.120 (Supp. 1980); Hawaii, HAWAII REV. STAT. § 327C-1 (Supp. 1979); Iowa, IOWA CODE § 702.8 (1979); Louisiana, LA. CIV. CODE ANN. art. 9.111 (West Supp. 1981); Michigan, MICH. STAT. ANN. § 14.228(2) (1980); and Virginia, VA. CODE § 54-325.7 (Supp. 1980).

51. IOWA CODE § 702.8 (1979).

52. Charron, *Death: A Philosophical Perspective on the Legal Definitions*, 1975 WASH. U. L.Q. 979, 994 (1975).

53. Arkansas, ARK. STAT. ANN. § 82-537 (Supp. 1979); Illinois, ILL. REV. STAT. ch. 110 1/2, § 302 (1979); Montana, MONT. REV. CODES ANN. § 50-22-101 (1979); Nevada, NEV. REV. STAT. § 451.007 (1979); Oklahoma, OKLA. STAT. ANN. tit. 63 § 1-301 (West Supp. 1980); Tennessee, TENN. CODE ANN. § 53-459 (1977); West Virginia, W. VA. CODE § 16-19-1(c) (Supp. 1980); Wyoming, WYO. STAT. § 35-19-101 (Supp. 1980).

54. TENN. CODE ANN. § 53-459 (1977).

This approach suggests that the traditional standard, cessation of heartbeat and respiration, is irrelevant in determining death. It unfortunately implies that before a determination of death the appropriate clinical tests for determining brain death should always be performed. Because most deaths could continue to be determined by the cessation of circulation, a standard requiring a complete neurological examination before declaring a person dead would be expensive and unnecessary. Several state statutes resolve this problem simply by indicating that other customary methods of determining death are still applicable. The California statute is typical of this approach:

A person shall be pronounced dead if it is determined by a physician that the person has suffered a total and irreversible cessation of brain function. There shall be independent confirmation of the death by another physician.

Nothing in this chapter shall prohibit a physician from using other usual and customary procedures for determining death as the exclusive basis for pronouncing a person dead. When a part of the donor is used for direct transplantation pursuant to the Uniform Anatomical Gift Act . . . and the death of the donor is determined by determining that the person has suffered a total and irreversible cessation of brain function, there shall be an independent determination of death under Section 7155.5 confirmation of the death by another physician. Neither the physician making the decision nor the physician making the independent confirmation shall participate in the procedures for removing or transplanting a part. Complete patient medical records required of a health facility pursuant to regulations adopted by the department . . . shall be kept, maintained, and preserved with respect to the requirements of this chapter when a person is pronounced dead by determining that the person has suffered a total and irreversible cessation of brain function.⁵⁵

Who May Determine Death?

Several legislatures have incorporated specific requirements concerning how many physicians must make the determination of brain death. The statutes in seven states, including Illinois,⁵⁶ require determination of death by two physicians. This requirement suggests either that some physicians cannot be trusted to make an accurate determination, or that the assessment is difficult or subjective, and therefore requires a consensus of opinion. There is no foundation for either assumption, and any licensed physician should be capable of determining

55. CAL. HEALTH & SAFETY CODE § 7180 (West Supp. 1981).

56. California, CAL. HEALTH & SAFETY CODE § 7180 (West Supp. 1981); Georgia, GA. CODE ANN. § 88.1715.1 (1979); Hawaii, HAWAII REV. STAT. § 327C-1 (Supp. 1979); Idaho, IDAHO CODE § 54-1819 (1979); Illinois, ILL. REV. STAT. ch. 110 1/2, § 302 (1979); Iowa, IOWA CODE § 702.8 (1979); Virginia, VA. CODE § 54-325.7 (Supp. 1980).

brain death, just as he is capable of determining cardiopulmonary death. On the other hand, it may be true that not all physicians are familiar with the established medical criteria upon which a brain death determination is to be made. Therefore, even though the criteria were designed to be simple and easily performed by any physician,⁵⁷ a second opinion would serve to alleviate both the fears of the public that the standards may be applied improperly, and the fears of physicians that they may be liable for their decisions to terminate lifesupport.

The Virginia statute requires that one of the two physicians determining death should be a specialist in neurology, neurosurgery, or electroencephalography.⁵⁸ Requiring the consultation of such a specialist would probably present no problems in major medical centers, but could cause some difficulties in areas where such a specialist might be difficult to find. Furthermore, specialists in electroencephalography might place far too much weight on the EEG, which has been recognized by the Harvard Committee and others as an insufficient test by itself to determine brain death.

Four states, including Illinois, require that physicians other than those who would be involved in the organ transplant make the determination of death.⁵⁹ This requirement recognizes the potential conflict of interest when a physician who has a critically ill patient in dire need of an organ transplant is asked to elevate the status of a potential donor. Hawaii⁶⁰ and California require an independent determination only if the donor is to be declared dead under the brain death provisions. The other states take the more reasonable approach of requiring that an independent physician make the determination of death regardless of how that determination is to be made.

Four state statutes provide for nonliability of physicians acting in good faith in making a determination of death.⁶¹ Any phy-

57. "The tests themselves should be simple, both easily and conveniently performed and interpreted by an ordinary physician (or nurse), and should depend as little as possible on the use of elaborate equipment and machinery. The determination of death should not require special consultation with specialized practitioners." *Refinement in Criteria for the Determination of Death: An Appraisal*, 221 J.A.M.A. 48 (1972).

58. VA. CODE § 54-325.7 (Supp. 1980).

59. California, CAL. HEALTH & SAFETY CODE § 7180 (West. Supp. 1981); Hawaii, HAWAII REV. STAT. § 327C-1 (Supp. 1979); Illinois, ILL. REV. STAT. ch. 110 1/2, § 302 (1979); Louisiana, LA. CIV. CODE ANN. art. 9.111 (West Supp. 1981).

60. HAWAII REV. STAT. § 327C-1 (Supp. 1979).

61. California, CAL. HEALTH & SAFETY CODE § 7180 (West Supp. 1981); Georgia, GA. CODE ANN. § 88-1715.1 (1979); TEX. REV. CIV. STAT. ANN. art. 4447t §§ 1-3 (Vernon Supp. 1980); and West Virginia, W. VA. CODE § 16-19-1(c) (Supp. 1980).

sician who incorrectly determines that a person is dead would not be liable regardless of whether that determination was based on brain death or on the customary common law definition of death.

Two states have adopted statutes specifying that brain death must include death of the brain stem.⁶² This language resolves any possible ambiguity between irreversible coma due to destruction of higher brain functions and death of the total brain.

CONCLUSION

The writers suggest that the time has come for the Illinois legislature to adopt a general statutory definition of death. The absence of such a statute continues to cause a waste of medical and legal resources, as well as to prolong the grief of families of patients receiving artificial life support.

The specifics of the statute should be established by the legislature after comprehensive hearings in which all interested parties have an opportunity to be heard. The legislation must assure the public that death will be properly determined based on well-defined criteria. Likewise, the legislation must provide the physician with sufficient guidance to feel confident that his determination will not be questioned. The legislation should balance this desire for specificity and certainty against the need to permit the medical profession the flexibility to refine the criteria as advances in medical science demand.

62. Nevada, NEV. REV. STAT. § 451.007 (1979), and Wyoming, WYO. STAT. 35-19-101 (Supp. 1980).

