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- (1) Will it be impossible for landlords to absorb the cost of bringing their units into compliance with the housing code, thus driving additional low-cost housing off the market?⁶⁰
- (2) If this decision does result in the decrease of low-cost housing, then who shall develop, own, and manage such housing?
- (3) If private enterprise is unable or unwilling to finance these massive repairs, should the government assume full responsibility for the construction, maintenance, and operation of a nationwide system of low-income housing?

It must be remembered that the only justification for this decision is that it will serve to "increase rather than decrease the stock of habitable housing in the District of Columbia."⁶¹ In the event this result does not follow, the justification collapses, and there is no further policy basis for the decision.

O. MAX GARDNER III

Medical Jurisprudence—Determining the Time of Death of the Heart Transplant Donor

Over the past twenty years medical science has made phenomenal strides in the areas of resuscitation, life support, and organ transplantation.¹ With the first human heart transplant² the medical and legal communities were forced to re-assess their positions on many legal and ethical issues. Because the heart is a vital and non-paired organ, a heart transplant necessarily results in the death of the donor.³ Also, it is necessary to remove the heart from the transplant donor as soon as possible after respiratory failure occurs. Because the heart tissue begins to deteriorate immediately upon termination of its oxygen supply, delay

⁶⁰The Robinson court concluded that this danger is largely imagined, citing only Ackerman, *Regulating Slum Housing Markets on Behalf of the Poor: Of Housing Codes, Housing Subsidies and Income Redistribution Policy*, 80 YALE L.J. 1093 (1971).

⁶¹No. 24,508, at 27-28.

¹See Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *Report: A Definition of Irreversible Coma*, 205 J.A.M.A. 337 (1968).

²The first human heart transplant was performed on Dec. 3, 1967 by Dr. Christiaan Barnard on Louis Washkansky at Groote Schuur Hospital in Cape Town, South Africa. R. PORZIO, *THE TRANSPLANT AGE* 17 (1969).

³See, e.g., Timmes, *The Cardiac Surgeon's Viewpoint*, in *THE MOMENT OF DEATH* 14 (A. Winter ed. 1969). The living donor from whom a kidney has been removed can survive on one normal kidney.

in removal minimizes the chance of survival in the recipient.⁴ Since the type of patient likely to be a potential donor is one who has suffered irreversible and irreparable brain damage⁵ and whose breathing is being maintained artificially by a respirator,⁶ the validity of the traditional criteria for determining the time of death—cessation of heart beat and respiration⁷—has been seriously challenged. Mindful of the current state of the arts of artificial life support and transplantation, the medical profession has quietly adopted irreversible coma or “brain death” as an alternative means of establishing the death of a human being.⁸

The heart can be removed from the “medically dead” donor while it continues to be oxygenated by artificially maintained respiration. However, since most state laws continue to recognize the cessation of heart beat and respiration as the legal test for determining the time of death, the stage is set for a direct confrontation between the medical and the legal criteria. A strict application of the traditional criteria would implicate as tortfeasors, or worse, surgeons who remove viable hearts from patients whose vital functions are being maintained artificially.⁹ In *Tucker v. Lower*,¹⁰ a wrongful death action¹¹ stemming from the world’s nineteenth human heart transplant, a Virginia trial court squarely faced the issue of what test should be used to determine the time of death. The

⁴Editorial, *What and When Is Death?*, 204 J.A.M.A. 539 (1968).

⁵American College of Cardiology, *Bethesda Conference Report: Cardiac and Other Organ Transplantation in the Setting of Transplant Science as a National Effort*, 22 AM. J. CARDIOLOGY 896, 906 (1968).

⁶Shapiro, *Criteria for Determining that Death Has Occurred: The Philadelphia Protocol*, 16 J. FOR. MED. 1, 2-3 (1969). The author advocates turning the respirator off, declaring the patient dead, and then turning the respirator back on to preserve the organs for transplantation.

⁷Haney & Salas, *Problems In Anatomical Gifts*, 18 J. FOR. MED. 140, 142 (1971), demonstrate that even in the more primitive societies heartbeat and respiration are generally the criteria used to determine death.

⁸Curran, *Legal and Medical Death—Kansas Takes the First Step*, 284 NEW ENG. J. MED. 260 (1971). The author concludes that the still-developing field of transplantation should not be locked into strict legal requirements. See also Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *supra* note 1; Timmes, *supra* note 3.

⁹Letter from Loren F. Taylor, M.D., J.D., Jan. 11, 1971, in 215 J.A.M.A. 296 (1971); Note, *Gifts—The Anatomical Gifts Act of North Carolina*, 6 WAKE FOREST INTRA. L. REV. 155, 161 (1969). The Deputy District Attorney for the City of Los Angeles maintains that murder is technically committed in many transplant situations because of the uncertainty of the legal definition of death. N.Y. Times, May 8, 1968, § A, at 23, col. 1.

¹⁰No. 2831 (Ct. of Law & Eq., Richmond, Va., May 25, 1972).

¹¹The plaintiffs also alleged malpractice and what amounted to civil conspiracy. The court concluded that no *prima facie* case of malpractice had been established and the jury found for defendants on the civil conspiracy allegation.

trial judge resolved this volatile issue by allowing the jury to select the death criteria from a list provided by the court—including the complete and irreversible loss of all function of the brain. The purpose of this note¹² is to examine the medical and legal ramifications of this instruction.¹³

On May 24, 1968, Bruce O. Tucker, age 54, was brought unconscious to the emergency room of the Medical College of Virginia Hospital. He had suffered a fall, sustaining severe head injuries. After cranial surgery Tucker was placed on a respirator which kept him "mechanically alive." At this time the treating physician noted that "[h]is prognosis for recovery is nil and death is imminent." A neurologist was called upon to obtain an electroencephalogram (EEG) recording to determine the state of the patient's brain activity. A single EEG recording was made which indicated no brain activity. The neurologist found no clinical evidence of viability and no evidence of cortical activity. Based upon this examination, he was of the opinion that the patient was then dead from a neurological standpoint. At the same time the neurologist also found that the decedent's heart was beating and that his body temperature, pulse, and blood pressure were all normal for a patient in his condition. The patient showed no evidence of being able to breathe spontaneously. The respirator was doing all the breathing. The neurologist was of the opinion the decedent's condition was irreversible at the time the patient was admitted to the hospital. Later in the day of May 25, in anticipation of a transplantation of Tucker's heart and kidneys, the respirator was turned off, and the patient was pronounced dead.

¹²The complex issues of euthanasia and organ donation are beyond the scope of this note and will be dealt with only as they relate to the topic of selecting criteria for determining the time of death.

¹³Instruction No. 7. The court instructs the jury that you shall determine the time of death in this case by using the following definition of the nature of death. Death is a cessation of life. It is the ceasing to exist. Under the law, death is not continuing but occurs at a precise time and that time must be established according to the facts of each specific case.

In determining the time of death, as aforesaid, under the facts and circumstances of this case, you may consider the following elements, none of which should necessarily be considered controlling, although you may feel under the evidence that one of [*sic*] more of these conditions are controlling: the time of the total stoppage of the circulation of the blood; the time of the total cessation of the other vital functions consequent thereto, such as respiration and pulsation; the time of complete and irreversible loss of all function of the brain; and, whether or not the aforesaid functions were spontaneous or were being maintained artificially or mechanically.

Tucker v. Lower, No. 2831 (Ct. of Law & Eq., Richmond, Va., May 25, 1972).

Until the respirator was cut off, Tucker maintained vital signs of life—that is, he maintained, with mechanical assistance, normal body temperature, pulse, blood pressure, and respiration. In addition to the evidence relating to the viable state of Tucker's organs at the time he was pronounced dead, the plaintiff presented competent evidence that Tucker could have "lived" at least one more day with the aid of a respirator if his heart and kidneys had not been removed.¹⁴ The court concluded¹⁵ that the plaintiff had established a *prima facie* case for recovery under the Virginia Death by Wrongful Act Statutes.¹⁶

The administrator of Tucker's estate brought a wrongful death action against the surgeons who participated in the transplant of Tucker's heart and kidneys. Plaintiff alleged that because certain vital signs were normal, the donor was alive at the time the heart and kidneys were removed. The defendants contended that because the brain of the donor had suffered total and irreversible damage, he was medically and legally dead several hours before the heart and kidneys were removed. The judge, apparently influenced by the expert testimony presented by the defendants, allowed the jury to select the *criteria* for determining the time of death. The factual issues that the jury was allowed to consider included the determination of the time of complete and irreversible loss of all function of the brain and whether the vital functions exhibited by the patient before the respirator was turned off were being maintained artificially.¹⁷ The jury returned a verdict for the defendants, apparently accepting the time of complete loss of all function of the brain as a criterion for determining the time of death.¹⁸

The cases show that the legal criteria for determining the time of death have remained basically unchanged over the past century. The chief criterion for diagnosing the time of death has been the cessation of the vital functions of respiration and circulation.¹⁹ However, most of

¹⁴This summary of the facts of the case (*Tucker v. Lower*, No. 2831 Ct. of Law & Eq., Richmond, Va., May 25, 1972) and its final disposition were obtained from the following sources: the allied papers (pleadings, motions, etc.) of the case; an unreported memorandum opinion written by the trial judge, the Honorable A. Christian Compton; letters from Judge Compton to the writer, July 25, 1972 and Sept. 13, 1972.

¹⁵*Tucker v. Lower*, No. 2831 (Ct. of Law & Eq., Richmond, Va., May 25, 1972) (unreported trial court opinion at 6-7).

¹⁶VA. CODE ANN. §§ 8-633 to 646.1 (1972).

¹⁷See note 13 *supra*.

¹⁸*Tucker v. Lower*, No. 2831 (Ct. of Law & Eq., Richmond, Va., May 25, 1972) (judgment filed by the court).

¹⁹*E.g.*, *In re Estate of Schmidt*, 261 Cal. App. 2d 262, —, 67 Cal. Rptr. 847, 854 (1968).

the cases in which the question has arisen have involved the issue of survivorship for purposes of inheritance, termination of joint tenancies, or determination of rights in the proceeds of insurance policies. Apparently, no court has ever applied a test for determining the time of death where the issue was the tort liability of a physician.²⁰ In the property-rights cases, the courts have looked to the medical profession for a "definition of death." In support of their application of the traditional criterion of the cessation of heart beat and respiration, the courts have relied on *Black's Law Dictionary*,²¹ on expert medical testimony,²² and on judicial notice of prevailing medical practice.²³ The criterion is sometimes restated as "the cessation of all vital functions,"²⁴ and occasional refinements, such as the accompanying permanent cessation of the action of the central nervous system, are sometimes added;²⁵ but, basically, the traditional criteria have remained unaltered.

In *Smith v. Smith*²⁶ the first attempt to induce a court to recognize the brain death test was made. There husband and wife received fatal injuries in the same accident, but the wife, who was in a coma due to brain injury, lived seventeen days longer than the husband. The court refused to agree that both husband and wife had died at the same time: "We take judicial notice that one breathing, though unconscious, is not dead."²⁷ In a similar California case, *In re Estate of Schmidt*,²⁸ the trial court's memorandum opinion stated that, in the opinion of the medical

²⁰See, e.g., 1 M. HOUTS, COURTROOM MEDICINE: DEATH § 1.03(2), at 31-32 (1971). The author notes critically the scarcity of judicial attempts, other than in property cases, to define death. See also Wasmuth, *The Concept of Death*, 30 OHIO ST. L.J. 32 (1969).

²¹*Smith v. Smith*, 229 Ark. 579, 586, 317 S.W.2d 275, 279 (1958); *In re Estate of Schmidt*, 261 Cal. App. 2d 262, —, 67 Cal. Rptr. 847, 854 (1968); *Thomas v. Anderson*, 96 Cal. App. 2d 371, —, 215 P.2d 478, 481-82 (1950); *Schmitt v. Pierce*, 344 S.W.2d 120, 133 (Mo. 1961). These cases applied the following definition of death from BLACK'S LAW DICTIONARY 488 (rev. 4th ed. 1968): "The cessation of life; the ceasing to exist; defined by physicians as a total stoppage of circulation of the blood, and a cessation of the animal and vital functions consequent thereon, such as respiration, pulsation, etc."

²²*Gray v. Sawyer*, 247 S.W.2d 496, 497 (Ky. 1952).

²³*Vaegemast v. Hess*, 203 Minn. 207, 210, 280 N.W. 641, 643 (1938).

²⁴*Telefilm, Inc. v. Superior Court*, 194 P.2d 542, 547 (Cal. App. 1948), *rev'd on other grounds*, 33 Cal. 2d 289, 201 P.2d 811 (1949); see *United Trust Co. v. Pyke*, 199 Kan. 1, 4, 427 P.2d 67, 71 (1967).

²⁵*Gugel's Adm'r v. Orth's Ex'r*, 314 Ky. 591, 594, 236 S.W.2d 460, 461-62 (1950) (based upon expert medical testimony); *In re Stuert's Estate*, 124 Neb. 149, 153, 245 N.W. 412, 414 (1932).

²⁶229 Ark. 579, 317 S.W.2d 275 (1958).

²⁷*Id.* at 589, 317 S.W.2d at 281.

²⁸261 Cal. App. 2d 262, 67 Cal. Rptr. 847 (1968).

experts, death might be the inability to be resuscitated or an irreversible coma. The trial court ignored this evidence however, and used the traditional criterion as outlined in *Black's Law Dictionary*—cessation of heart beat and respiration. Appellants argued that the traditional definition was anachronistic in view of the recent medical developments relating to heart transplants, and that the trial court should have accepted the inability to be resuscitated as the definition of death. The appellate court affirmed the definition used by the trial court and stated that the definition offered by the medical experts, though interesting, would not dispose of the survivorship issue at bar because there was no evidence as to the resuscitability of both spouses.²⁹ Thus, a survey of the existing case law demonstrates that most courts apply the traditional medical criterion³⁰ and that one court would possibly be willing to apply non-traditional criteria (established by expert medical testimony) if the opportunity were properly presented.

In 1970 Kansas codified a "definition of death"³¹ in an attempt to achieve the related goals of obtaining viable organs for transplantation and of protecting transplant surgeons from civil and criminal liability.³² The statute permits use of an alternative definition of death. A

²⁹*Id.* at _____, 67 Cal. Rptr. at 854.

³⁰*See, e.g.*, Comment, *Legal Aspects of Euthanasia*, 36 ALBANY L. REV. 674, 688 (1972).

³¹The text of KAN. STAT. ANN. § 77-202 (Supp. 1971) providing alternative definitions of death is as follows:

Definition of death. 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 the trials of civil and criminal cases, any laws to the contrary notwithstanding.

³²Letter from Taylor, *supra* note 9. Dr. Taylor is a physician and lawyer who assisted in drafting the Kansas statute.

subject is legally dead when either of the following conditions exist: respiration and cardiac function have ceased *or* spontaneous brain function is absent. Apparently, the means for determining whether either of these events has occurred are to be left to the standards of the medical profession. There are some in the medical and legal professions who do not support a legislative statement of the criteria to be used in determining the time of death, and a debate has arisen over the need for legislation such as that enacted in Kansas.³³ Those opposed to the statute fear that the law will stultify medical advances as more becomes known about transplantation and life-support mechanics. They would prefer to rely on the courts to determine the issue as one of fact on a case-by-case basis based on expert medical evidence.³⁴ Opposed to such a view are those who desire legislative protection for those doctors performing transplants, especially heart transplants, on patients with irreversible brain damage.³⁵ Although no cases have yet appeared interpreting the statute, it appears that the wording is flexible enough to accommodate the objectives of both camps. The statute provides an alternate "definition of death" in allowing the "absence of spontaneous brain function"³⁶ to be an indicator of death, but it does not make rigid the means by which the absence of spontaneous brain function is to be determined. The courts are required by the statute to rely upon "ordinary standards of medical practice"³⁷ in evaluating medical opinion as to the time of death and the criteria used in making the time-of-death determination. Since the Kansas statute is the first legislative definition of death, its passage is not necessarily indicative of a general acceptance by the law of non-traditional death criteria.

³³See, e.g., Curran, *supra* note 8; Kennedy, *The Kansas Statute on Death—An Appraisal*, 285 NEW ENG. J. MED. 946 (1971) (criticizing the Kansas death statute on the grounds that it will hamper medical science); Mills, *The Kansas Death Statute: Bold and Innovative*, 285 NEW ENG. J. MED. 968 (1971) (concluding that the Kansas statute will protect transplant physicians legally while allowing flexibility in death determination).

³⁴See, e.g., Kennedy, *supra* note 33. In Note, *Human Organ Transplantation: Some Medico-Legal Pitfalls For Transplant Surgeons*, 23 U. FLA. L. REV. 134, 136 n.15 (1970) the following observation is made: "Many physicians have shown a resistance to pressing for a change in the legal definition of death, feeling that a legal enactment would necessarily be rigid and restrictive. There is sentiment that the danger of effective prosecution is remote because expert testimony not supporting the brain death criteria would be impossible to obtain."

³⁵See, e.g., Note, 23 U. FLA. L. REV., *supra* note 34, at 156 (suggesting that society should assume through legislation some of the risk now being borne by transplant physicians).

³⁶KAN. STAT. ANN. § 77-202 (Supp. 1971).

³⁷*Id.*

Another statutory enactment closely related to the 1970 Kansas statute is the Uniform Anatomical Gift Act (UAGA),³⁸ adopted by more than forty states and the District of Columbia.³⁹ The UAGA is an attempt to legislate a more efficient means of obtaining organs for the purpose of transplantation.⁴⁰ The importance of the Act to the debate over what criterion should be used in determining the time of death lies not in what it says but in what it fails to say. The UAGA specifically omits a definition of death. The Commissioners decided that this was primarily a medical question currently in a state of flux rather than an issue for legal codification.⁴¹ The Act provides simply that “[t]he time of death shall be determined by a physician who attends the donor at his death, or, if none, the physician who certifies the death.”⁴² The Kansas statute was adopted in part to complement the UAGA as enacted in Kansas by providing the definition of death that was purposely omitted from the UAGA.⁴³ The case law interpreting the provisions of the UAGA relating to the determination of the time of death is non-existent. The commentators are split along the same lines that formed when Kansas passed its statute providing for alternative “definitions of death.” Those who believe that the courts should and will accept what the medical profession declares to be the criterion for determining the time of death oppose any legislation on the matter and support the omission in the UAGA.⁴⁴ Those desiring the security of a stated legal guideline advocate modification of the UAGA to provide for procedures

³⁸UNIFORM ANATOMICAL GIFT ACT, as proposed by the Commissioners on Uniform State Laws on July 30, 1968; e.g., N.C. GEN. STAT. §§ 90-220.1 to -220.11 (Supp. 1971).

³⁹Dukeminier, *Supplying Organs for Transplantation*, 68 MICH. L. REV. 811, 817 (1970).

⁴⁰The UAGA provides for designation by the donor before his death of the use to which his organs are to be put. If the deceased gave no consent prior to his death for the removal of his organs the Act lists the priority by which the next of kin can give consent after the death of the donor. UNIFORM ANATOMICAL GIFT ACT § 2(b).

⁴¹UNIFORM ANATOMICAL GIFT ACT § 7, Comment; see Smith & Smith, *Kansas and the Uniform Anatomical Gift Act*, 19 U. KAN. L. REV. 569, 574 (1971).

⁴²UNIFORM ANATOMICAL GIFT ACT § 7(b); N.C. GEN. STAT. § 90-220.7(b) (Supp. 1971).

⁴³Letter from Taylor, *supra* note 9.

⁴⁴See, e.g., American College of Cardiology, *supra* note 5, at 908 (stating that the subject was correctly treated in the UAGA); Sommer, *Additional Thoughts On the Legal Problems of Heart Transplants*, 41 N.Y. ST. B.J. 196, 199 (1969) (definition of death must ultimately be determined by physicians); cf. Comment, *Suggested Revisions to Clarify the Uncertain Impact of Section 7 of the Uniform Anatomical Gift Act on Determination of Death*, 11 ARIZ. L. REV. 749 (1969) (predicting that the courts will allow the medical profession to use any reasonable standard in determining death).

for determining the time of death.⁴⁵

An important issue common to both the debate over the need for the Kansas statute and the debate over the wisdom of omitting a definition of death from the UAGA is whether courts consider the standard for determining the time of death to be an issue of law or fact.⁴⁶ There are actually two standards the courts must consider: first, the criterion for determining if death has occurred, that is, the stage in the decline of life at which the medical profession declares or is allowed to declare a person dead, and, second, the clinical tests to be used in determining if the death criterion has been met.⁴⁷ In determining the first standard, several questions are presented. First, a decision must be reached whether to recognize, in certain circumstances, criteria other than the traditional cessation of heart beat and respiration. If the traditional criteria are outmoded, as most of the medical profession claims,⁴⁸ is

⁴⁵Wecht & Aranson, *Medical-Legal Ramifications of Human Tissue Transplantation*, 18 DEPAUL L. REV. 488 (1969); Comment, *Medico-Legal Problems with the Question of Death*, 5 CALIF. W.L. REV. 110, 122 (1968); Note, 6 WAKE FOREST INTRA. L. REV., *supra* note 9, at 155.

⁴⁶The Ad Hoc Committee of the Harvard Medical School, which set forth clinical criteria to be used in diagnosing irreversible coma in 1968, assumed that the issue would be determined by expert medical testimony and took a stance opposed to legislation in the area, as follows:

In this report, however, we suggest that responsible medical opinion is ready to adopt new criteria for pronouncing death to have occurred in an individual sustaining irreversible coma as a result of permanent brain damage. If this position is adopted by the medical community, it can form the basis for change in the current legal concept of death. No statutory change in the law should be necessary since the law treats this question essentially as one of fact to be determined by physicians.

Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *supra* note 1, at 339.

⁴⁷Heretofore, as seen in the cases discussed in the text accompanying notes 19-25 *supra*, courts apparently have relied upon the medical profession for these criteria. Now that there has been a *de facto* adoption by the members of the medical profession of the brain death definition it remains to be seen whether the courts will continue to rely upon expert medical testimony in establishing a new death standard.

⁴⁸"The death of a person occurs when the brain is totally and irreversibly damaged and nonfunctioning; many other tissues may still be viable and functioning." American College of Cardiology, *supra* note 5, at 908. Beecher, *After the "Definition of Irreversible Coma,"* 281 NEW ENG. J. MED. 1070 (1969), alleges that the definition of irreversible coma as set down in the *Harvard Report* of 1968 has been widely accepted. Corday, *Life-Death in Human Transplantation*, 55 A.B.A.J. 629, 631 (1969), reveals that many physicians have based their criteria for diagnosis of cerebral death on lesser considerations than suggested by the *Harvard Report* and have transplanted hearts of those still having spontaneous respiration. See also Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *supra* note 1; Task Force on Death and Dying of the Institute of Society, Ethics, and the Life Sciences, *Refinements in Criteria for the Determination of Death: An Appraisal*, 221 J.A.M.A. 48 (1972) (approving of the death criteria established by the *Harvard Report* of 1968); Comment, 5 CALIF. W.L. REV., *supra* note 45, at

“brain death” or irreversible coma to be the stage in a patient’s decline at which he may be declared dead even though he exhibits normal (though mechanically maintained) respiration and heart beat? Kansas has responded in the affirmative to this initial question.⁴⁹ Second, if a change is to be made in the legally recognized death criteria, should the change be by legislative enactment or should the courts make the change by relying upon expert medical testimony? And if the decision is made to allow the courts to make the change in criteria by relying upon medical testimony, should the court acknowledge the medical realities as a matter of law or as a matter of fact—that is, should the judge instruct the jury as to what is the standard for death-determination, or should the jury be allowed, as in *Tucker*, to decide as a matter of fact in each case what the recognized standard is to be?

However the change is effected, a decision must be made regarding the clinical means used to determine if the acknowledged point at which death legally occurs has been reached. If, as in Kansas, absence of spontaneous brain function is adopted by statute as the point at which death can be legally declared, what clinical indicators of this state are to be recognized? What clinical indicators are sufficiently reliable to make it legally permissible for a surgeon to declare an artificially respirated person dead? Some committees of the medical profession have proposed certain criteria based upon simple clinical observations.⁵⁰ Other members of the profession would place principal reliance on the absence of electrical brain activity as recorded by an electroencephalogram.⁵¹ It is obvious that acceptable means must be developed to insure against premature transplants. Are these clinical criteria to be

121 (present medical definition of death alleged to entail the irreversible loss of neural function); Note, 23 U. FLA. L. REV., *supra* note 34, at 137-38.

⁴⁹KAN. STAT. ANN. § 77-202 (Supp. 1971); see note 31 *supra* for the full text of the statute.

⁵⁰For example, the following is a brief sketch of the criteria set forth in the Report of the Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *supra* note 1: (1) unreceptivity and unresponsivity to externally applied stimuli and inner need; (2) no spontaneous muscular movements or spontaneous respiration; (3) no elicitable brain reflexes; and (4) flat electroencephalogram. In addition, the report suggests that the above findings again be verified on a repeat testing at least 24 hours later, and that the existence of hypothermia and central nervous system depressants be excluded. It is also recommended that if the criteria are fulfilled the patient be declared dead before the respirator is disconnected.

⁵¹Hamlin, *Life or Death by EEG*, 190 J.A.M.A. 112-14 (1964). Recently, however, it has been concluded that a majority of neurologists have rejected the proposition that EEG determinations are sufficient as the sole basis for a determination of death. Task Force on Death and Dying of the Institute of Society, Ethics, and the Life Sciences, *supra* note 48, at 53.

required by statute? The Kansas statute makes no reference to the means by which the attending physician is to determine if there is an absence of spontaneous brain function.⁵² Is the judge to instruct the jury on the basis of expert medical testimony, or should the jury be allowed to choose among the clinical means presented?

It would seem to be imperative, because of the legal and social consequences, that the time of death be ascertainable by the application of absolute and unchanging criteria.⁵³ Thus, it should not be within the province of the jury to determine at what stage one ceases to live. Nor should it be within the jury's power to select the technical indicators to be employed in determining if that stage was reached. These decisions are of such great social importance that they should not be left to the vagaries of jury deliberations. The multitude of problems that would arise if the jury were permitted to select the criteria for determining the time of death is obvious.⁵⁴

One of the significant aspects of *Tucker* is that the judge considered the issue of what criteria were to be used in determining the time of death to be one of *fact* to be decided by the jury. In the instruction dealing with the time of death,⁵⁵ the jury was allowed to choose the applicable criteria from several elements provided by the court (from expert medical testimony presented). The major choice presented to the jury was between the traditional criterion on the one hand—the cessation of heart beat and respiration—and the complete and irreversible loss of all brain function on the other. This is the first case in which an American trial judge has allowed the jury to consider loss of brain function as a criterion for determining the time of death. However, even though the jury was not instructed to consider the medical testimony controlling,⁵⁶ the jury did adopt the brain death standard presented by expert medical testimony, and the practice of relying upon the medical profession for the standard of death was thus continued.

⁵²KAN. STAT. ANN. § 77-202 (Supp. 1971).

⁵³Halley & Harvey, *Medical vs. Legal Definitions of Death*, 204 J.A.M.A. 423, 425 (1968), suggest that conflicts between the medical and legal definitions of death should be resolved through an interprofessional co-operative effort.

⁵⁴The kind of problems that would result is exemplified by the possibility of having one jury declare a heart donor alive at the time of the transplantation while another jury found the same donor was dead when his heart was removed.

⁵⁵Note 13 *supra*.

⁵⁶*Id.*

There was no instruction to the jury as to the clinical means to be employed in determining whether the death standard, as selected by the jury, had been met.⁵⁷ Thus the court also allowed the jury to determine, as an issue of fact, whether the clinical tests employed by the defendants in reaching their diagnosis of brain death were sufficient to safeguard against premature transplantation. Physicians performing transplantations on patients still exhibiting mechanically maintained vital signs (heart beat and respiration) are less likely to be subject to malpractice and wrongful death liability if the medical profession's death standard is followed by the juries. The judge's instructions and the jury verdict reached thereon are consistent with the provisions of the UAGA, which leaves the determination of the time of death to the attending or certifying physician. Total reliance is placed upon the judgment of the physician. The death-criteria instruction given in *Tucker* is very similar in substance to the Kansas statute which allows "alternative definitions of death." Both allow the "brain death criteria" to be used if supporting medical evidence has been given. Also, both make no mention of the clinical tests to be applied in verifying the diagnosis of "brain death." One major difference is that the Kansas statute makes the death criteria a matter of law whereas in *Tucker* it was a matter of fact. Another difference is that the Kansas statute requires a person to be declared dead if either of the legal standards are met, whereas in *Tucker* the jury was given much greater discretion in its determination of death. Thus *Tucker* has broken the precedent established by the cases relying upon *Black's Law Dictionary* for death-determining criteria and has narrowed the gap between medical reality and legal cognizance in the area of transplant surgery.

CONCLUSIONS

Two general conclusions may be drawn concerning the effect of *Tucker* on previous law. First, the case re-emphasizes the role of the medical profession in the determination of death. Through the jury's acceptance of the expert medical testimony, the medical profession was allowed to dictate, as a matter of fact, when death occurs and by what clinical tests this determination is to be made. Although the law has little expertise in the field of clinical diagnostics, as the guardian of

⁵⁷*Id.*

social welfare it does have expertise in the field of social policy. That is, the criteria for determining the time of death should *not* be a factual issue to be decided by the jury in each case but, instead, should be a socially accepted statement of the law, duly responding to medical advancements but not completely controlled by a purported consensus of medical science.⁵⁸

Second, by recognizing brain death as a possible means for determining the time of death, the *Tucker* case, like the Kansas statute, acknowledges medical realities. Since the appearance of the *Harvard Report*,⁵⁹ which stated the "brain death" criteria in 1968, there has been general acceptance by the medical profession that one is dead when his brain is not functioning and his respiration is not spontaneous.⁶⁰ Again, the medical need for transplant organs and the social need for protecting potential donors from premature transplantation are not issues to be resolved by exclusive reliance upon the medical profession.

While the medical profession would doubtless approve of the verdict reached in *Tucker*, the death criteria and the clinical tests applied to indicate the satisfaction of these criteria are questions too socially important to be considered factual issues to be decided by a jury. Since there is no legal precedent for the courts to follow in establishing death criteria to be employed in the transplant context, the various legislatures of the states should recognize the dilemma with which the courts and physicians are faced and should return to the pronouncement of death the much needed characteristic of finality.

RICHMOND STANFIELD FREDERICK II

Separation of Powers—The Suspended Sentence

Every day more than one hundred and fifty Americans are killed in automobile accidents.¹ Over half of these fatalities involve alcohol-

⁵⁸There are other problems with which law-makers will have to grapple in this complex area of transplantation. Who is to decide how the limited number of available organs is to be distributed for transplantation? Are physicians to be given absolute freedom to determine who is to live and who is to die? When human resources are to be allocated, who is to exercise the ultimate control? Unfortunately, discussion of these issues is beyond the limitations of this note.

⁵⁹Harvard Medical School Ad Hoc Committee to Examine the Definition of Brain Death, *supra* note 1.

⁶⁰See authorities cited note 48, *supra*.

¹McDowell, *How Phoenix Gets Drunks Off the Road*, READER'S DIGEST, Feb. 1972, at 52.