

# **ACCEPTANCE OF WHOLE-BRAIN DEATH CRITERIA FOR DETERMINATION OF DEATH: A COMPARATIVE ANALYSIS OF THE UNITED STATES AND JAPAN**

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## **INTRODUCTION**

Throughout history, societies have struggled with the meaning of death. Until the 1960's, there was relatively little disagreement about when the precise moment of death occurred. Before the advent of modern medical devices that sustain the heart and lungs, the general consensus was that death occurred when all of the major organ systems of the body ceased to function. More recently, because of these medical advances, the clinical concept of brain death was developed to refer to the irreversible functional loss of the entire brain, including the brain stem.

To date, many industrialized nations have adopted the whole brain death standard for establishing death. In both the United States and Japan, the driving force behind acceptance of the brain death standard stemmed from a need for transplantable organs. In the late 1970's and early 1980's, many state legislatures in United States passed legislation, and some state courts reached holdings that included the whole brain standard of determining death as an alternative to the traditional heart-lung standard. Today, all fifty states and the District of Columbia permit the use of brain death for death determination.

However, the Japanese have been wrestling with the concept of brain death for the past thirty years. A gradual progression in Japan toward accepting a brain death standard for organ procurement purposes has resulted in legislation passed in 1997 to allow brain dead individuals to donate their organs. Despite the new law, cultural obstacles are not easily defeated; thus there is

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still much controversy concerning the acceptance of the whole brain death criteria and organ transplantation.

The United States and Japan have taken different paths to recognizing the whole brain death criteria. Part I of this article discusses the historical development of defining death, the medical definition of death, and specific death assumptions. Part II documents the development of the acceptance of brain death in the United States, including general guidelines for death determination, the legal basis for death determination, and religious and philosophical views about death determination. Lastly, Part III examines Japan's acceptance of brain death in light of new legislation passed in 1997. Japanese perceptions of death as well as cultural and philosophical values are also explored. Unfortunately, these factors have collectively lessened the effectiveness of the new organ transplant law in Japan.

## I. HISTORICAL DEVELOPMENT OF DEFINING DEATH

### *Early Definitions*

For centuries, death was evidenced in many cultures when an individual's heart stops moving and he becomes cold and unable to move.<sup>1</sup> The heart and lung functions cannot be separated. A cessation of breathing quickly leads to a cessation of heart function and vice versa. Cessation of heart/lung function is followed by cessation of all cognitive ability and all other brain function.<sup>2</sup> Centralist opinion before the 1700's usually placed the heart as the source of vital principles that defined life.<sup>3</sup> Over time, doctors noted that electroshock, manual stimulation, and chemical stimulants reversed some conditions that were previously thought of as absence of life.<sup>4</sup> As modern medicine was established in the eighteenth century the "three-signs theory of

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1. See Hajime Handa, *Diversification in the Concept of "Birth and Death": The Controversy About "Brain Death and Organ Transplantation" in Japan*, 39 SURGICAL NEUROLOGY 437, 437 (1993); BARRY FURROW ET AL., HEALTH LAW § 16-3 (Barry R. Furrow et al. eds., 1995).

2. See FURROW, *supra* note 1, at 673. See, e.g., David Skegg, *Irreversibly Comatose Individuals: "Alive" or "Dead"*, 33 CAMBRIDGE L.J. 130, 133 (1974). The heart, lungs, and the brain are so interdependent that the death of one of the components would rapidly lead to the death of others when the individual lacks cardiac and respiratory support systems.

3. See David J. Powner et al., *Medical Diagnosis of Death in Adults: Historical Contributions to Current Controversies*, 348 LANCET 1219, 1219 (1996) (provides an excellent historical overview of how death was diagnosed from the 1700's to the 1980's, including the different tests that were employed at a particular time).

4. *Id.* at 1220.

death" developed.<sup>5</sup> The ability to resuscitate contributed to further evaluation of the definition of life because reviving the heart and lungs did not always revive the higher functions of the brain.<sup>6</sup>

Consequently, the development and use of sophisticated machinery in both respiration and circulation in the late 1800's introduced difficulties in determining death in many instances. The most significant advances that elevated the brain to a position of importance were the advent of the defibrillator and practical ventilators after 1920 and the use of the electroencephalogram (EEG) after 1930.<sup>7</sup> The development of tissue culturing by which parts of the body could be maintained after death was equally important. This practice eventually evolved into organ transplantation as we know it today.<sup>8</sup> However, it was not until the end of the 1950's, with the widespread use of respirators, that attention became focused on the conditions termed "*le coma depasse, la mort du systeme nerveux*, irreversible coma, vegetative state, and prolonged coma."<sup>9</sup> Around the same time period, organ transplants began to be performed.

Human kidney transplants were introduced in the 1950's followed by liver and heart transplants in the late 1960's.<sup>10</sup> In 1967, Dr. Christian Bernard carried out the first heart transplant in South Africa,<sup>11</sup> which led to the problematic question of whether the donor was dead or alive.<sup>12</sup> From that point forward, it became clear that it would be necessary to agree on a diagnosis of death that could be pinpointed to a particular time: Society would have to think of death as a point in time, not a process.

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5. See Handa, *supra* note 1, at 437. The three signs theory of death consisted of respiratory arrest, cardiac arrest, and the loss of pupillary reaction.

6. See Powner, *supra* note 3, at 1219.

7. See *id.* at 1220.

8. See *id.* at 1219.

9. Handa, *supra* note 1, at 437; See James L. Bernat, *A Defense of the Whole-Brain Concept of Death*, HASTINGS CENTER RPT., Mar.-Apr. 1998, at 15. French neurologists were the first to coin the term "*coma depasse*" in 1959 and recognized that the depth of coma, apnea, and unresponsiveness displayed by patients with destroyed cerebral hemispheres and brain stems were qualitatively different from previously described comas. See *id.*

10. See Margaret Lock, *Death in Technological Time: Locating the End of Meaningful Life*, 10 MED. ANTHROPOLOGY Q. 575, 580 (1996).

11. See *id.* Contrary to public knowledge, physicians at a Mississippi hospital claim that they were the first to conduct a human heart transplant. In 1964, the physicians sacrificed a chimpanzee and placed its heart into a 68 year old man with severe myocardial disease, who was in a state of shock at the time of the surgery and was only expected to live within the next day or two. The experiment was significant because it enabled researchers to establish that a heart could be kept functioning by perfusion for at least an hour outside of either the primate's or the human's body. See *id.*; Handa, *supra* note 1, at 437.

12. Handa, *supra* note 1, at 437.

### *Death Assumptions*

The many assumptions surrounding the concept of death should be examined before any in depth study of brain death ensues. These assumptions include the following: Death is (1) equivocal; (2) fundamentally a biological phenomenon; (3) irreversible; (4) an event not a process; and (5) determined by physicians at a specific time.<sup>13</sup> Death is a biological phenomenon that only living things can experience.<sup>14</sup> Death is applied in its entirety, not and on a cell-by-cell or tissue-by-tissue basis.<sup>15</sup> Third, death is irreversible and is unidirectional.<sup>16</sup> Fourth, death is understood as an event, not a process.<sup>17</sup> Later in the article, the significance of this idea will be explored in the context of Japanese society. Lastly, death should be determined by a physician, not by a social convention.<sup>18</sup>

### *Medical Definition of Brain Death*

To understand the legal and cultural issues surrounding brain death, it is imperative to define it as a medical term. Brain death occurs when significant damage to the brain destroys the brain's ability to regulate respiratory function.<sup>19</sup> The most frequently cited causes of brain death include: (1) direct trauma to the head; (2) massive hemorrhaging into the brain due to an aneurysm; and (3) the lack of adequate oxygen to the brain because of cardiac or respiratory arrest.<sup>20</sup>

The brain has three anatomic divisions: the cerebrum or higher brain, the cerebellum or midbrain, and the brainstem or

13. See Bernat, *supra* note 9, at 15-16; Morris B. Abram, *The Need for Uniform Law on the Determination of Death*, 27 N.Y.L. SCH. L.R. 1187, 1200-01 (1982). General principals and objectives to an acceptable determination of death include: (1) death is a single phenomenon, (2) death of the organism as a whole, (3) incremental (not radical) changes, (4) uniformity among people and situations, and (5) adaptability to advances in technique.

14. See *id.*

15. See *id.*

16. See *id.*

17. See *id.*; BLACK'S LAW DICTIONARY 488 (4<sup>th</sup> ed. 1968). Death is not a continuous event but is an event that takes place at a precise time. Death is expressed as "a total stoppage of the circulation of blood and a cessation of the animal and vital functions consequent thereon, such as respiration [and] pulsation, . . ." See *id.*

18. Bernat, *supra* note 9, at 16; Alexander Morgan Capron, *A Statutory Definition of the Standards for Determining Human Death: An Appraisal and a Proposal*, 121 U. PA. L.R. 87, 92 (1972). The matter of defining death is wholly medical is expressed frequently by physicians and non-physicians. *Id.*

19. David Forster, *When the Body is Soul: The Proposed Japanese Bill on Organ Transplantations from Brain Dead Donors*, 3 PAC. RIM L. & POL'Y J. 103, 105 (1994).

20. See Forster, *supra* note 19, at 105.

lower brain.<sup>21</sup> In modern medicine, three concepts of brain death are discussed: (1) the “lower brain” concept, (2) the “higher brain” concept, and (3) the whole brain concept.<sup>22</sup>

First, the “lower brain” concept suggests that brain stem death is equated with the death of the individual<sup>23</sup> because the lower brain controls functions such as respiration, yawning and swallowing.<sup>24</sup> Some argue that there is no cerebral projection if the brain stem is dead.<sup>25</sup> The “higher brain” (neocortical) concept of brain death has been subject to much controversy in recent years.<sup>26</sup> The higher brain controls consciousness, feeling, memory, and thought.<sup>27</sup> According to this theory, loss of the function of the cerebrum’s outer shell, named the cortex, is equated with death.<sup>28</sup> The “higher brain” is very sensitive to lack of oxygen compared with the brainstem. This lack of oxygen can produce a “persistent vegetative state”—rendering loss of all brain function except the brainstem.<sup>29</sup> Accordingly, those supporting the higher brain standard of death categorize consciousness as a precondition for life.<sup>30</sup> The whole brain concept is the

21. See Morris B. Abram, *The Need for Uniform Law on the Determination of Death*, 27 N.Y.L.SCH. L.R. 1187, 1189 (1982). The cerebrum has been referred to as the “higher brain” because it primarily controls consciousness. The brainstem has been called the “lower brain” because it controls spontaneous vegetative functions that include swallowing, yawning, respiration, and sleep-wake cycles. Generally, neuroscientists agree that “higher brain” functions that include consciousness and cognition are most likely not mediated by the cerebral cortex alone but from interrelations between the brainstem and the cortex. See *id.*

22. Jurgen Link et al., *Concepts and Diagnosis of Brain Death*, 69 FORT. SCI. INT’L. 195, 196 (1994).

23. See *id.* Most countries do not subscribe to this view of brain death.

24. See Forster, *supra* note 19, at 106.

25. See Link, *supra* note 22, at 196.

26. See Link, *supra* note 22, at 196; R.D. Troug et al., *Rethinking Brain Death*, 20 CRITICAL CARE MED. 1705-1713 (1992); R.D. Troug, *Is It Time to Abandon Brain Death*, HASTINGS CENTER REP., Jan.-Feb. 1997, at 24; David Randolph Smith, *Legal Recognition of Neocortical Death*, 71 CORNELL L.R. 850, 888 (1986) (discussing the higher brain standard of determining death and assessing possible weaknesses for practical determination under this standard). See also *Cruzan v. Director, Mo. Dep’t of Health*, 497 U.S. 261 (1990); *In re Quinlan*, 355 A.2d 647 (N.J. 1976), 429 U.S. 922(1976);

27. See Forster, *supra* note 19, at 106.

28. See Link, *supra* note 25, at 196.

29. Ben A. Rich, *Post modern Medicine: Deconstructing the Hippocratic Oath*, 65 U. COLO. L.REV. 77, 125 (1993). The brainstem controls pulse, respiration, and blood pressure—commonly called “vegetative” functions. The neocortex make possible all functions and behaviors that distinguish us as persons, such as consciousness and cognition. See *id.*

30. See *Id.* A significant shortcoming of this theory is that there is no operational procedure that can be done to prove that the loss of consciousness is irreversible. See also John B. Oldershaw, *Persistent Vegetative State: Medical, Ethical, Religious, Economic and Legal Perspectives*, 1 DEPAUL J. HEALTH CARE L. 495, 536 (1997).

irreversible loss of all function of the entire brain, including the brain stem and the cortex, with<sup>31</sup> only an artificial respirator maintaining cardio-pulmonary functions.<sup>32</sup>

## II. EVOLUTION OF THE WHOLE BRAIN DEATH CONCEPT IN THE U.S.

### *General Guidelines for Determining Brain Death*

In May 1968, the *Journal of the American Medical Association* published an editorial describing a dilemma about vital organ transplants.<sup>33</sup>

It is obvious that if . . . organs [such as the liver and heart] are taken long after death, their chance of survival in another person is minimized. On the other hand, if they are removed before death can be said to have occurred by the strictest criteria that one can employ, murder has been done.<sup>34</sup>

The editorial concluded that the moment of death should therefore be defined as precisely as possible.<sup>35</sup>

Months later, in August 1968, an ad hoc committee composed mostly of physicians, chaired by Dr. Henry Beecher and assembled by the Harvard Medical School, published its findings on the topic of death determination.<sup>36</sup> The Harvard Committee offered a definition of irreversible coma that became a new criterion of death.<sup>37</sup> The formulation of a new criteria of death was needed to deal with (1) increased burdens on patients, families, and hospital resources caused by improvements in resuscitative and supportive measures and (2) an obsolete criteria for determining death leading to a controversy in organ transplantation.<sup>38</sup> The Harvard Committee described three criteria of "irreversible coma" that must be satisfied for establishing a diagnosis of brain death.<sup>39</sup>

31. Link, *supra* note 25, at 196.

32. Forster, *supra* note 19, at 106.

33. See *What and When Is Death*, 204 JAMA 219, 219 (1968)(editorial).

34. *Id.* at 219.

35. See *id.*, at 220 "When all is said and done, it seems ironic that the end point of existence, which ought to be as clear and sharp as chemical titration, should so defy the power of words to describe it and the power of men to say with certainty, 'It is here.'" *Id.*

36. See H.K. Beecher, *A Definition of Irreversible Coma. Report of the Ad Hoc Committee of the Harvard Medical School to Examine the Definition of Brain Death*, 205 JAMA 387, 387 (1968) (explaining its conclusions by satisfactorily diagnosing patients who appear to be in a deep coma according to four points and determining the characteristics of a permanently nonfunctioning brain).

37. Stuart A. Schneck, *Brain Death and Prolonged States of Impaired Responsiveness*, 58 DENVER L.J. 609, 611 (1981) (explaining the Harvard study and offering a diagnosis for determining brain death following reasonable medical standards).

38. Beecher, *supra* note 36, at 337.

39. See *id.*

The first criterion is “unreceptivity and unresponsivity” [sic] to “externally applied stimuli and inner need.”<sup>40</sup> The patient must show total unawareness of the need to eat or to release waste and shows no response to intensely painful stimuli.<sup>41</sup>

The second criterion is the absence of movement or breathing for a period of at least one hour, including all types of spontaneous and reflexive muscular movement.<sup>42</sup> The individual does not respond to stimuli including pain, touch, sound, or light.<sup>43</sup> Additionally, the individual has apnea, that is, the lack of spontaneous respiration.

The third criterion is lack of reflexes.<sup>44</sup> Symptoms include fixed and dilated pupils that do not respond to a direct source of light when the head is turned on its side or when ice water is placed in the ear.<sup>45</sup> The specific reflexes induced in this test are the cephalic reflexes that take place between the cranial nerves and the brainstem.<sup>46</sup>

These three criteria are supplemented by the additional requirement of a flat electroencephalogram.<sup>47</sup> Additionally, the Harvard Committee recommended that a declaration of death be made by doctors who were uninvolved in any way with the planned transplantation.<sup>48</sup>

The evidence indicates that an individual who meets the Harvard criteria will not recover and supports the conclusion that these criteria could be useful for determining when death has occurred.<sup>49</sup> Consequently, the Harvard Committee’s views were well received within the medical community.<sup>50</sup>

Following the Harvard study, a collaborative study of 503 individuals suspected of brain death was completed in 1977.<sup>51</sup>

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40. See Beecher, *supra* note 36, at 337.

41. See *id.*

42. See *id.*

43. See *id.*

44. See *id.* at 337-338. All of the tests advanced in the Harvard Study should be repeated at least 24 hours later with no change.

45. See *id.* at 338.

46. See Forster, *supra* note 19, at 107.

47. Beecher, *supra* note 36, at 338. The electroencephalogram provides confirmatory data, and when available, it should be utilized. In the absence of electroencephalographic monitoring, the lack of cerebral function has to be determined by only clinical signs or by the lack of circulation judged by standstill blood in the retinal vessels, or lack of cardiac activity. See *id.*

48. See *id.* at 339.

49. See Capron, *supra* note 18, at 91.

50. See *id.* at 91. But see David Rutstein, *The Ethical Design of Human Experiments*, 98 DAEDALUS 523, 526 (1969) (expressing concern over the major ethical change in accepting the Harvard criteria for death determination with little regard for public discussion of its significance).

51. See *An Appraisal of the Criteria for Cerebral Death*, 237 JAMA 982, 983 (1977) (summary statement). Cerebral death requires (1) all appropriate examina-

The 1977 study assessed the validity and limits of the brain death criteria. If the test is completed successfully, then a brain death diagnosis is possible in patients with small amounts of sedative drugs in the blood; in patients undergoing therapeutic procedures that make examination of one or more of the cranial nerves impossible; and in patients otherwise meeting the criteria whose pupils are small.<sup>52</sup>

Although the Harvard criteria remain widely accepted, medical tests and criteria are liable to change as knowledge increases and techniques for determination are more refined. A study that attempted to resolve these questions about brain death culminated in a report in 1981 by the President's Commission for the Study of Ethical Problems in Medicine which suggested reliance on "accepted medical standards."<sup>53</sup> The report is a detailed analysis asserting that the definition of death is both a medical and social issue,<sup>54</sup> and also considers biomedical, legal, philosophical, and religious formulations.<sup>55</sup> The report concludes with a recommendation of the Uniform Determination of Death Act (UDDA).<sup>56</sup>

Whether the cardio-respiratory or whole brain death criteria is used, doctors must determine the cessation of function of the organs and its irreversibility beyond doubt. Similar to the collaborative study in 1977, the UDDA sets out several complicating conditions that can affect determination of death, such as drug and metabolic intoxication, hypothermia, status as a child, and shock.<sup>57</sup>

A critical difference between the Harvard criteria and the Commission report is that the President's Commission diligently distinguishes "brain death" from the situation where the person

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tions and therapeutic procedures have been performed; (2) cerebral unresponsivity, apnea, dilated pupils, absent cephalic reflexes and electrocerebral silence be present for at 30 minutes at least six hours after the ictus; and (3) that if one of these tests is met imprecisely or cannot be tested, a confirmatory test is made to demonstrate lack of cerebral blood flow. *See id.*

52. *See An Appraisal of the Criteria for Cerebral Death*, at 982. Absence of sedative drug intoxication, normothermia, cardiovascular shock, remedial lesion are required to apply the usual criteria for brain death. *See id.*

53. President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research, *Guidelines for the Determination of Death*, 246 JAMA 2184, 2184 (1981) [hereinafter President's Commission]. The medical tests required to establish that the legal criterion is met is not mentioned in the report.

54. *See* H. Richard Beresford, Book Review, 27 N.Y.L. SCH. L.R. 1273, 1274 (1982).

55. *See id.* at 1274.

56. *See id.*; UNIF. DETERMINATION OF DEATH ACT §1, 12A U.L.A. 593 (1980); *see infra* p.17.

57. *See* Commission, *supra* note 53, at 2186.

who has lost higher functions of the brain, thereby rendering the patient in a persistent vegetative state.<sup>58</sup> Since vegetative functions are dependent on the brain stem, it is significant that the UDDA explicitly demands the loss of brain stem function in its determination of brain death.

### *Public Policy*

In the United States, both the concept of whole brain death and the dead donor rule have been largely accepted by society. Multiple organ procurement represents the most significant implication of the brain death concept.<sup>59</sup> Brain death is a prerequisite for multi-organ procurement and some suggest that "organ transplantation is the engine driving the brain death train."<sup>60</sup> A declaration of brain death before multi-organ transplants is required because of the dead donor rule.<sup>61</sup> The dead donor rule provides that the individual who is donating organs must be pronounced dead before the transplant procedure can begin:

As a matter of public policy, respecting the dead donor rule is essential to maintaining public confidence in the medical profession's role in organ procurement. Continuing to require the dead donor rule frees patients from the fear that physicians will declare them dead prematurely for the purpose of procuring their organs.<sup>62</sup>

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58. See Beresford, *supra* note 54, at 1276-77; Amir Halevy et al., *Brain Death: Reconciling Definitions, Criteria, and Tests*, 119 ANNALS INTERNAL MED. 519, 520 (1993) The President's Commission considered three possibilities of death:

*Nonbrain:* Permanent cessation of the flow of bodily fluids, tested by lack of pulse or respiratory efforts.

*Whole-brain:* Permanent cessation of the integrative functioning of the organism as a whole, tested by lack of brain stem reflexes, no respiratory efforts after challenge, and no responsiveness or voluntary movements.

*Higher-brain:* Permanent loss of what is essential to the nature of humans, tested by lack of responsiveness and voluntary movements.

59. See Forster, *supra* note 19, at 108. The distinction between the brain death and cardio-respiratory standard is critical for heart, pancreas and lung transplants. When the patients heart stops beating, the cells in these organs begin to die due to lack of oxygen rendering them non-transplantable. Liver transplants have traditionally been transplanted from a brain dead donor even though partial liver transplants have been performed from live adult donors to children. Kidneys can be taken from live donors (only one is needed for human survival) as well as brain dead or cardiac dead individuals. Corneas can be taken from both a brain dead donor or a cardiac dead donor. *See id.*

60. See Bernat, *supra* note 9, at 21.

61. *See id.* at 22. *But see* Robert M. Arnold et al., *The Dead Donor Rule: Should We Stretch It, Bend It or Abandon It*, 3 KENNEDY INST. ETHICS J. 263, 263 (1993); Trog, *supra* note 26, at 34. Scholars have debated whether the dead donor rule is necessary for organ donation.

62. *See* Bernat, *supra* note 9, at 22.

Others have suggested replacing the dead donor rule with a rule that would allow multi-organ procurement from the *dying*.<sup>63</sup> However, this idea raises serious questions and creates confusion because this new rule would essentially legally authorize a physician to kill a patient to obtain their organs.<sup>64</sup>

Even though there have been many advances in the field of organ transplantation, organ donation policies have not resulted in enough organs for those who need them.<sup>65</sup> The most frequently performed transplants involve the kidney, heart, lung, liver and the pancreas.<sup>66</sup>

In the United States, the physician will usually ask the family to donate the organs of their loved one after brain death is

63. *See id.* at 21.

64. *See* Bernat, *supra* note 9, at 21.

65. *See Life or Death. The Issue of Payment in Cadaveric Organ Donation*, 265 JAMA 1302, 1305 (1991)(commentary) (providing that a death benefit payment to families could be motivation to consider organ donation and that this benefit would not necessarily be coercive); Monique C. Gorsline et al., *Symposium: Organ Donation. The United States System, the International Solution, and the Cadaveric Organ Donor Act: "and the winner is. . ."*, 20 J.CORP. L. 5, 31 (1995). Various problems in the current organ donation system hinder organ donation:

Failure of persons to sign written directives.

Failure of police and emergency personnel to locate written directives at accident sites.

Uncertainty on the part of the public about the circumstances and timing of organ recovery.

Failure on the part of medical personnel to recover organs on the basis of written directives.

Failure to systematically approach family members concerning donation.

Inefficiency on the part of some organ procurement agencies in obtaining referrals of donors.

High wastage on the part of some organ procurement agencies in failing to place donated organs.

Failure to communicate the pronouncement of death to the next of kin.

Failure to obtain adequate informed consent from family members.

*See also* Melissa N. Kurnit, *Organ Donation in the United States: Can We Learn from Successes Abroad*, B.U. INT'L & COMP. L.REV. 405, 405 (1994) (proposing that the time has come for the United States to reevaluate the systems for request, specifically presumed consent laws presently in force throughout the world). A presumed consent approach similar to France, Belgium, Austria, and Singapore may prove helpful in the reevaluation. *See id.* *See generally* Christian Williams, *Combating the Problem of Human Rights Abuses and Inadequate Organ Supply Through Presumed Donative Consent*, 26 CASE W. RES. J. INT'L L. 315, 315 (1994) (examining the country's moral and cultural biases against organ procurement). *E.g.*, Roy Calne, Book Review, 348 LANCET 1501 (1996). Most donor of organ transplantation have suffered brain trauma and are victims from road-traffic accidents, other traumatic brain damage, and intracranial bleeding from spontaneous disease. Improvements in road safety has not increased the number of people giving consent for organ donation for the past thirty years. *See id.*

66. Sarah D. Barber, *The Tell-Tale Heart: Ethical and Legal Implications of In Situ Organ Preservation in the Non-Heart-Beating Cadaver Donor*, 6 HEALTH MATRIX: J.L.MED. 471, 474 (1996).

declared and the family's or the donor's prior consent is required.<sup>67</sup> The pool of available donors must be expanded to help meet the needs of those who require organs.<sup>68</sup> To meet these needs, it is essential to have an effective way to determine death utilizing the whole-brain death determination while still requiring multi-organ donors to be dead prior to multi-organ donation.

### *Case Law on, and Legislative Intervention in, Brain Death*

The development of the brain death criteria in the medical field was spurred by advances in human organ transplants.<sup>69</sup> However, before the legislative and judicial revision of the definition of death began in the late 1960's, common law had already established a legal standard. At that time, the common law defined death as the permanent cessation of all vital functions, including the cardiac and respiratory functions.<sup>70</sup>

The early reluctance of the courts to accept the brain death standard is strikingly exemplified in *Gray v. Sawyer*, a 1952 Kentucky Supreme Court case.<sup>71</sup> The case involved the issue of survivorship in a will contest of a married couple who were hit by a train while in their automobile. At the scene of the accident, blood gushed from the wife in spurts. The court stated that "realistically, a person is dead when there had been a complete decapitation of the head."<sup>72</sup> However, the court concluded that the body is not dead as long as there is a heartbeat evidenced by the blood gushing in spurts.<sup>73</sup>

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67. See Barker, *supra* note 66, at 475. See Joseph M. Darby, *Approach to Management of the Heartbeating "Brain Dead" Organ Donor*, 261 JAMA 2222, 2227 (1989). Required request laws exist in all states and the District of Columbia obligating hospitals to notify the nearest organ procurement agency after brain death has been declared in individuals who have donated their organs in advance. Family consent is required when the individual has not executed an instrument of donation. See generally Calne, *supra* note 54, at 1502. In the past, organs have been procured from executed criminals and from professional donors who would accept money for an organ. This practice is condemned by the International Transplantation Society. Also, organs from poor people have allegedly been sold to the wealthy even though there is no documentation of this activity. See *id.*

68. See *id.* at 477 ("Implementing a policy if *in situ* organ preservation is the next logical step in combating the organ shortage.")

69. See Patrick K. Emerson, *Is There Life After Brain Death*, 2 COOLEY L.R. 419, 422 (1984).

70. See *Smith v. Smith* 317 S.W. 2d 275 (Ark. 1958); *In re Estate of Schmidt*, 261 Cal. App. 2d 262 (1968); *Schmidt v. Schmidt*, 261 Cal. App. 2d 262 (1968); *In re T.A.C.P.*, 609 So. 2d 588 (Fla. 1992); *Gray v. Sawyer*, 247 S.W. 2d 496 (Ky. 1952); *Vaegemast v. Hess* 280 N.W. 641 (Minn. 1938); *Schmidt v. Pierce*, 344 S.W. 2d 120 (Mo. 1961);

71. See *Sawyer*, 247 S.W.2d at 496.

72. *Id.* at 497.

73. See *id.*

As time progressed, the courts have had to rule on cases that presented opportunities to alter the common law rule.<sup>74</sup> A trend developed to recognize the brain-based standard even in the absence of a statute in the jurisdiction.<sup>75</sup> In 1988, a landmark New Jersey Supreme Court case<sup>76</sup> held that once a determination of brain death has been rendered, machines sustaining life should be removed to minimize agony for the family.<sup>77</sup> This case involved considerable confusion for the physicians and the hospital involved as they proceeded after the determination of death was made.<sup>78</sup> The goal of the common law revision as determined by the New Jersey case was to determine when an individual who was receiving life-sustaining treatment had died.

The first state to enact a statute recognizing the brain death criteria was Kansas.<sup>79</sup> The Kansas legislation was drafted in response to developments in organ transplantation as well as medical support of dying patients. The Kansas statute identified two alternative methods for determining death – the traditional heart lung definition and the Ad Hoc Committee's definitions of "brain death."<sup>80</sup> The Ad Hoc Committee stated that either alternative definition could be used for all purposes in the state including civil and criminal cases.<sup>81</sup> After the Kansas statute was enacted, there was a significant amount of criticism concerning its passing. Some commentators argued that "public bodies and laymen in general have no role to play in [the] process of change."<sup>82</sup> Others have argued that the statute appears to be based on two separate ways to die.<sup>83</sup> Unfortunately, the Kansas

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74. See Abram, *supra* note 21, at 1193.

75. See *State v. Fierro*, 603 P.2d 74 (1979). The defendant appealed a first degree murder conviction arguing that the victim died when the attending physician terminated life support systems. The court held that there was sufficient evidence to conclude that the victim dies from "brain death" due to the fatal wounds inflicted by the defendant three days before the life support system was removed; *Lovato v. District Court*, 601 P.2d 1072 (Colo. 1979). The issue in *Lovato* was whether contemporary standards could be applied for death determination despite absence of a legislative statute setting forth a standard for this purpose. The court held that it adopted the provisions of the Uniform Brain Death Act as an additional way of defining death. See also *State v. Guess*, 715 A.2d 643 (Conn. 1998); *Strachan v. John F. Kennedy Memorial Hosp.*, 507 A.2d 718 (N.J. 1988); *People v. Eulo*, 482, N.Y.S. 2d 436, 472 N.E. 2d 286 (N.Y.1984); *State v. Velarde*, 734 P.2d 449 (Utah 1986).

76. See *John F. Kennedy Memorial Hosp.*, 507 A.2d at 742.

77. See *Id.* at 727.

78. See Charlotte K. Goldberg, *Choosing Life After Death: Respecting Religious beliefs and Moral Convictions in Near Death Decisions*, 39 SYRACUSE L.REV. 1197, 1209 (1988).

79. See KAN. STAT. ANN. § 77-205 (1997).

80. See *id.*

81. See *id.*

82. Ian Kennedy, *The Kansas Statute on Death: An Appraisal*, 285 NEW ENGLAND L. MED. 946, 947 (1971).

83. See Capron, *supra* note 18, at 109.

statute was designed to provide an alternative form of evidence of death, not a true alternative definition of death.<sup>84</sup>

Brain death statutes generally fall into three different categories: that which defines death as (1) occurring with either an irreversible cessation of spontaneous respiration and circulation or irreversible cessation of brain function; (2) cessation of circulatory and respiratory functions or, in that the event these functions are being artificially maintained, death occurs with the total and irreversible cessation of brain function; and (3) occurring when a person has suffered a total and irreversible cessation of brain function.<sup>85</sup> The three categories of statutes have great variations between them and prompted the National Conference of Commissioners on Uniform State Laws to take action.<sup>86</sup>

In 1978, the Commissioners passed the Uniform Brain Death Act (UBDA).<sup>87</sup> The UBDA formulation does not mention the traditional cardio-respiratory standard of determining death. Two years later, the Commissioners approved the Uniform Determination of Death Act (UDDA) after deleting "for legal and medical purposes" in the UBDA.<sup>88</sup>

The UDDA provides two definitions of death. According to UDDA, "An individual who has sustained either (1) irreversible cessation of circulatory or respiratory functions, or (2) irreversible cessation of all functions, including the brain stem, is dead. A determination of death must be made in accordance with accepted medical standards."<sup>89</sup> The construction of the UDDA was designed to provide a source of organs from bodies that were declared legally dead as well as protection of the physician who made the determination of death.

Unresolved issues still exist regarding death determination. The UDDA does not describe any specific tests for determining death and does not address treatment decisions that should be made after the determination of brain death has been com-

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84. See FURROW, *supra* note 1, at 675. "[T]he 'heart-lung' and 'brain death' definitions of death are not different kinds of death; they are alternative ways of diagnosing (or proving) the same condition-death." *Id.* at 676.

85. See Stacie L. Glass, *Lovato v. District Court: The Dilemma of Defining Death*, 58 DENVER L.J. 627, 629 (1981). See Emerson, *supra* note 58, at 423-424.

86. See Emerson, *supra* note 58, at 424.

87. See Unif. Brain Death Act §1, 12 U.L.A. 65 (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"). This Act was adopted by Alabama and West Virginia. See ALA. CODE § 22-31-1(b) (1979); W. VA. CODE § 16-91-1 (1980).

88. See 12A U.L.A. §1 *supra* note 45.

89. Uniform Determination of Death Act §1.

pleted.<sup>90</sup> Rather, the UDDA attempts to establish the time of death under the second definition regarding the irreversible cessation of all the functions of the whole brain; however, the exact time has not been identified.<sup>91</sup>

Currently, all fifty states and the District of Columbia accept brain death as a legal definition of death in one of three forms: statutory, judicial, and/or regulatory basis for each jurisdiction.<sup>92</sup>

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90. See Goldberg, *supra* note 77, at 1197.

91. See A.L. Moses, *Uniform Determination of Death Act Adds Certainty to the Definition of Death*, 16 EST. PLAN., Sept.-Oct. 1989, 276, at 277. Comments provided by the commissioners of the Act mentioned that the "time of the death is a fact to be determined like all other facts, and, if necessary, by litigation." *Id.* The Legislative Director of the commissioners of the Act stated that the timing issue is a question of fact, not the law, and that efforts to deal with it in a statute may confuse the distinction. A neurosurgeon commented that standard medical tests can determine that death has occurred but not exactly when it occurred. See *id.*

92. Legal basis of accepting brain death in the fifty states and the District of Columbia: ALA. CODE §§ 22-31-1 to -4 (1997); ALASKA STAT. § 09.65.120 (Michie 1998); State v. Fierro, 603 P.2d 74 (Ariz.1979) (adopting the Uniform Brain Death Act); ARK. CODE ANN. § 20-17- 101 (Michie 1991); CAL. HEALTH & SAFETY CODE §§ 7180-7183 (West Supp. 1998); COLO. REV. STAT. § 12-36-136 (West 1998), Lovato v. District Court, 601 P.2d 1072 (Colo. 1979) (adopting the Uniform Brain Death Act); CONN. GEN. STAT. ANN. § 19a-278(b), (c) (West 1997); DEL. CODE ANN. tit. 24, § 1760 (1997); D.C. CODE ANN. § 6-2401 (1981); FLA. STAT. ANN. § 382.009 (West 1998); GA. CODE ANN. § 31-10-16 (1996); HAW. REV. STAT. § 327C-1(1993 & Supp. 1997); IDAHO CODE § 54-1819 (1994 & Supp. 1998); ILL. COMP. STAT. ANN. 755/50-2 (West 1993); IND. CODE ANN. § 1-1-4-3 (Michie 1998), Swafford v. State, 421 N.E. 2d 596 (Ind. 1981) (adopting the Uniform Determination of Death Act); IOWA CODE ANN. § 702.8 (West 1993); KAN. STAT. ANN. § 77-205 (1997); KY. REV. STAT. ANN. § 446-400 (Michie 1985 & Supp. 1996); LA. REV. STAT. ANN. § 9:111 (West 1991); ME. REV. STAT. ANN. tit. 22, §§ 2811-2813 (West 1964 & Supp. 1997); MD. HEALTH-GEN. I CODE ANN. §§ 5-201 to 202 (1997); Commonwealth v. Golston, 366 N.E. 2d 744 (Mass. 1977) (adopting a brain death standard); MICH. COMP. LAWS ANN. § 333.1021-1024 (West 1992); MINN. STAT. ANN. § 145.135 (West 1998); MISS. CODE ANN. § 41-36-3 (1993 & Supp. 1998); MO. ANN. STAT. § 194.005 (West 1996 & Supp. 1998); MONT. CODE ANN. § 50-22-101 (1997); NEB. REV. STAT. ANN. §§ 71-7201 to 71-7203 (Michie 1996); NEV. REV. STAT. ANN. § 451.007 (Michie 1997); N.H. REV. STAT. ANN. § 141-D:1to:2(1996); N.J. REV. STAT. § 26:6A-1 to -8 (1996); N.M. STAT. ANN. § 12-2-4 (Michie 1978); People v. Eulo, 472 N.E.2d 286 (N.Y. 1984); N.C. GEN. STAT. § 90-323 (1997); N.D. CENT. CODE § 23-06.3-01 to .3-02 (1991); OHIO REV. CODE ANN. § 2108.30 (West 1993); OKLA. STAT. ANN. tit 63 §§ 3121-3123 (West 1997); OR. REV. STAT. § 432.300 (1997); PA. STAT. ANN. tit.35 §§ 10,201-10,203 (West 1993); R.I. GEN. LAWS § 23-4-16 (1996); S.C. CODE ANN. § 44-43-450, -460 (Law, Co-op. 1985 & Supp. 1997); S.D. CODIFIED LAWS § 34-25-18.1 (Michie 1994); TENN. CODE ANN. § 68-3-501 (1996); TEX. HEALTH & SAFETY CODE ANN. § 671.001 (West 1992); UTAH CODE ANN. §§ 26-34-1 to -2 (1998); VT. STAT. ANN. tit.18, § 5218 (Michie 1982); VA. CODE ANN. § 54.1-2972 (Michie 1998); *In re Bowman*, 617 P.2d 731 (Wash.1980) (adopting the Uniform Determination of Death Act); W.VA. CODE § 16-10-1 to -4 (1997); WIS. STAT. ANN. § 146.71 (West 1997); WHY. STAT. ANN. § 35-19-101 to -103 (Michie 1997).

The UDDA has been adopted by a majority of the states.<sup>93</sup> Other states have endorsed brain death as a definition of death without explicitly adopting the language of UDDA.<sup>94</sup> The remaining states recognize a definition of death using the whole brain or cardio-respiratory standard by way of judicial decision.<sup>95</sup>

Physicians have been challenged in both civil<sup>96</sup> and criminal<sup>97</sup> arenas for acting upon a determination of brain death even though the authority to disconnect life support seems clearly established. There have been a number of homicide cases where defendants have unsuccessfully argued that the actions of physicians, who disconnected the life-support of brain dead victims, sufficiently relieved them of liability.<sup>98</sup> Currently, a physician has yet to be held liable when the manner of death determination follows the statute in a particular jurisdiction or the accepted medical standards of the community.<sup>99</sup>

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93. States that have adopted UDDA: Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Idaho, Indiana, Kansas, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Utah, Vermont, West Virginia, and Wyoming.

94. States that have adopted a brain death standard other than UDDA: Alabama, Alaska, Connecticut, Florida, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, New Jersey, North Carolina, Tennessee, Texas, Virginia, and Wisconsin.

95. States adopting brain death by court decision: Arizona, Colorado, Indiana, Massachusetts, Nebraska, New York, and Washington.

96. See *Bowman*, 617 P.2d at 731. The case involved a guardian who urged termination of a life support system from a five-year old child. The physician's determination of the time of death was upheld. *E.g.*, *Tucker v. Lower*, No. 2831 (Richmond, Va. L. & Eq. Ct., May 23, 1972). This was the first case that presented the question of defining death in the context of organ transplantation and demonstrates the uncertainty of the litigation process for the defendants as well as for the physicians. Furthermore, the case signaled the beginning of a judicial trend to adopt an accepted medical standard for defining brain death.

97. See *State v. Fierro*, 603 P.2d 74 (Ariz. 1979); *Lovato v. District Court*, 601 P.2d 1072 (Colo. 1979); *State v. Inger*, 292 N.W.2d 119 (Iowa 1980); *Cowan v. State*, So.2d 1346 (Miss.1981); *People v. Vanderford* 258 N.W.2d 502 (Mich. Ct. App. 1977); *State v. Holsclaw*, 261 S.E.2d 126 (N.C.1979). See, Lawrence B. Guthrie, *Brain Death and Criminal Liability*, 15 CRIM. L. BULL. 40, 61 (1979).

An important consideration is assessing the physician's criminal liability involves the physician's duty to treat the patient. The physician has no legal duty to accept the patient, but once he does so he must continue treatment either until his duty is relieved by being discharged, informing the patient that he intends to discontinue treatment (coupled with adequate notice to enable the patient to find other medical treatment), or until his services are no longer needed.

*Id.* at 58-59.

98. See *People v. Eulo*, 482, N.Y.S.2d 436, 472 N.E.2d 286 (N.Y. 1984); *Commonwealth v. Golston*, 366 N.E.2d 744 (Mass. 1977).

99. See *Emerson*, *supra* note 58, at 426. The perception of liability for a determination of death could deter a physician from acting. Issues involving life support systems are likely to become more complicated as medical technology continues to advance. See *id.*

*Religious Views and Philosophical Acceptability*

Organized religion has voiced its opinions about the definition and criteria of death.<sup>100</sup> For the majority of the believers in Catholicism, Protestantism, and Judaism, the concept of whole brain death is an acceptable<sup>101</sup> addition to the traditional heart lung standard.<sup>102</sup> The acceptance is partly due to the widely held belief that the principal reason for deciding that a person is dead should be based on the fundamental understanding of the nature of man.<sup>103</sup> All members of society do not exactly agree on the formulation of man's nature, but what is necessary is agreement on some widely accepted general statements about the nature of man.<sup>104</sup> From a moral and ethical view, individuals who have lost all brain function should be treated as having died. This position is reconciled with the major religions of the United States.

The Orthodox Jewish response to whole brain death is based on biblical and Talmudic ethics.<sup>105</sup> In early religious sources, the lack of a heartbeat or a pulse was not considered a significant factor in determining death.<sup>106</sup> In addition, the earliest biblical sources point out that cellular death does not occur at the same time as death of the human being.<sup>107</sup> Further, early Judaic sources single out the ability to breath independently as a prime index of life.<sup>108</sup> As a result, to define death in terms of the Old Testament, the loss of respiration must be combined with other evidence to support non-life.<sup>109</sup> Evidence that can be combined

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100. See Bernat, *supra* note 9, at 22.

101. See *id.*

102. See Truog, *supra* note 22, at 35. Truog stresses the advantage of returning to the traditional heart lung approach for death determination in part because it would provide a "common denominator" that almost all cultural groups and religions would accept. *Id.*

103. See Frank J. Veith et al., *Brain Death. A Status Report of Medical and Ethical Considerations*, 238 JAMA 1651, 1653 (1977). Total destruction of the brain does not conflict with sound secular philosophic considerations, Orthodox Judaic law, traditional Catholic ethics or mainstream Protestant theology. See *Id.*

104. See *id.* at 1653.

Almost all segments of society will agree that some capacity to think, to perceive, to respond, and to regulate and integrate bodily functions is essential to human nature. Thus, if none of these brain functions are present and will ever return, it is no longer appropriate to consider a person as whole as being alive.

*Id.*

105. See *id.*

106. See Veith, *supra* note 103, at 1653.

107. See *id.* The twitching of a lizard's amputated tail or the motions of a decapitated man is not considered residual life but life that has continued after the animal has died. See *id.*

108. See *id.*

109. See *id.* at 1653-1654.

with a loss of spontaneous respiration include determination of death by total irreversible cessation of the whole brain.<sup>110</sup>

Catholic theologians have also generally accepted a brain-based concept of death.<sup>111</sup> The traditional Catholic understanding of death is based on the time the soul departs from the body. Since it is not possible to observe this act, signs of death must be physically measured to make a determination.<sup>112</sup>

According to Protestant theology, there is no consistent position on the definition of death.<sup>113</sup> However, a leading spokesperson of Protestant traditions supports the whole-brain death criteria by stressing "mere cellular and organ system activity alone is not sufficient to treat the human body as if it were alive."<sup>114</sup>

Despite this general attitude of acceptance, some jurisdictions have enacted religious exemptions to allow for differences in opinion on when death actually occurs.<sup>115</sup> The most notable is the New Jersey Declaration of Death Act. This Act provides that,

the death of an individual shall not be declared upon the basis of neurological criteria . . . when the licensed physician authorized to declare death has reason to believe, on the basis of information in the individual's available medical records, or information provided by a member of the individual's family or any other person knowledgeable about the individual's personal religious beliefs that such a declaration would violate the personal religious beliefs of the individual. In these cases, death shall be declared . . . solely on the basis of cardio-respiratory criteria. . . .<sup>116</sup>

This exemption allows those individuals with personal religious convictions to be accommodated legally.<sup>117</sup> Ideas have been discussed to deal with these issues of uncertainty surrounding religious exemptions in determining death.

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110. See Veith, *supra* note 103, at 1654. But see Paul A. Byrne et al., *Brain Death—An Opposing Viewpoint*, 242 JAMA 1985, 1989 (1979). The Orthodox Jewish position flatly opposes a concept of death based on irreversible brain function rather than on total destruction of the entire brain. See *id.*

111. See *id.* at 1654. The Roman Catholic Church has not made an authoritative statement concerning a whole brain standard of death. But see Byrne, *supra* note 110, at 1989. Catholic teaching of death is based on an alteration of being, not lack of function. See *id.*

112. See *id.* The use of cessation of pulse and breathing places the moment of apparent death closer to the time of true theological death. See *id.*

113. See *id.*

114. *Id.*

115. See N.J. STAT. ANN. §26: 6A-5 (West 1996); N.Y. COMP. CODES R. & REGS. tit. 10, § 400.16(e)(3) (1991).

116. Declaration of Death Act § 6A-5.

117. See Bernat, *supra* note 9, at 22.

Some argue that physicians should not insist that death must be declared by using the whole brain standard when it would obviously violate an individual's religious belief.<sup>118</sup> Physicians occasionally authorize the continuation of life support systems in cases where families have a difficult time accepting death as the ventilator pumps oxygenate blood, keeping the patient's color and body temperature normal.<sup>119</sup>

A recent New York case that dealt differently with religious exemption is *In re Long Island Jewish Medical Center*.<sup>120</sup> The New York statute allows "reasonable accommodation of the individual's religious or moral objection to the [determination of brain death] as expressed by the individual, or by the next of kin or the person closest to the individual."<sup>121</sup> The court held that the hospital was entitled to disconnect life support from a brain dead infant despite the state law requiring reasonable accommodation of religious preferences.<sup>122</sup> Even though the hospital did not comply with the portion of the statute requiring hospitals to have a policy on reasonable religious accommodation, the court determined that the hospital did comply with the regulatory provision because the doctors consulted with the parents, encouraged a second opinion, and sought judicial intervention when they concluded that the baby was irretrievably brain dead. In addition, the hospital offered to transfer the infant to another hospital, which the parents refused to do.<sup>123</sup> The court held that the hospital made reasonable accommodations to comply with the parents' religious beliefs.<sup>124</sup>

The concept of whole brain death is criticized and questioned by many even though it remains one of the legal standards by which many countries defined death. Specifically, critics argue the appropriateness of the neocortical or "higher brain" criteria to determine death.<sup>125</sup> Under the "higher brain"

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118. See Robert D. Orr et al., *Requests for "Inappropriate Treatment Based on Religious Beliefs*, 23 J.MED. ETHICS 142, 147 (1997). This article discusses whether physicians should honor patient's wishes in regard to religion and death determination.

119. See ALAN MEISEL, *Applications of Right to Die to Particular Treatments and Illnesses*, in THE RIGHT TO DIE 2, 624-630, (John Wiley, & Sons, Inc., 2d ed., 1995 & Supp.1998).

120. See *In re Long Island Jewish Medical Center (Baby Doe)*, 641 N.Y.S.2d 989 (Sup. Ct. Queens County 1996).

121. N.Y. COMP. CODES R. & REGS. tit.10, § 400.16(e)(3) (1991).

122. See *In re Long Island Jewish Medical Center*, 641 N.Y.S.2d at 992.

123. See *id.*

124. See *id.*

125. See Meisel, *supra* note 119, at 628; Robert M. Veatch, *Impending Collapse of the Whole-Brain Definition of Death*, HASTINGS CENTER REP., Jul.-Aug. 1993, at 18. Veatch proposes the adoption of neocortical brain death in the form of a conscious clause. See *id.* There would be a presumption of "higher brain" death as

formulation, death occurs when the individual suffers an irreversible loss of cognition and consciousness, but still retains brain stem functions.<sup>126</sup> Under this formulation those in a persistent vegetative state and anencephalic infants would be declared dead.<sup>127</sup> Today, no jurisdiction allows the "higher brain" standard of death to be equated with death.<sup>128</sup> The whole brain standard represents the best policy for determination of death at this time in the United States.<sup>129</sup>

### III. JAPAN STRUGGLES WITH THE BRAIN DEATH STANDARD

#### *Organ Shortage in Japan*

Up until 1997, Japan was one of the few industrialized nations that did not accept the definition of brain death.<sup>130</sup> Specifically, Japan has been accused of taking from the organ pool but not donating to it. Reasons for this may be Japanese history, cul-

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a determination of death unless the individual explicitly asks to be pronounced dead based on whole brain death. See David Randolph Smith, *Legal Recognition of Neocortical Death*, 71 CORNELL L.REV. 850, 856 (1986); Gina Kolata, *Ethicists Debate New Definition of Death*, N.Y. TIMES, Apr. 29, 1992, at C13. See also D. Alan Shewmon, "Brainstem Death," "Brain Death" and Death: A Critical Re-Evaluation of the Purported Evidence, 14 ISSUES IN LAW & MED.125, 128 (1998). A neurologist rejects all brain-based formulations of death. The new proposed formulation of defining death is a variation on the non-heart-beating donor approach. It is possible to remove organs from a patient disconnected from life support, after the final cessation of heartbeat and circulation but before actual death. This way, death would neither be caused nor hastened by death. Organ donation techniques could then be modified to fall under intervivos donation as opposed to the current dead donor rule. See *id.* at 129.

126. *In re T.A.C.P.*, 609 So. 2d 588 (Fla. 1992) (holding anencephalic infants are not legally dead because their heart still functions).

127. Meisel, *supra* note 119, at 629.

128. See *In re Barry*, 445 So.2d 365 (Fla. Dist. Ct. App. 1984); *Brophy v. New Eng. Sinai Hosp., Inc.*, 497 N.E.2d 626 (Mass.1986); *In re Torres*, 357 N.W.2d 332 (Minn. 1984); *In re Jobes*, 529 A.2d 434 (N.J. 1987); *Delio v. Westchester County Medical Ctr.*, 516 N.Y.S.2d 677 (App. Div. 1987); *In re Myers*, 610 N.E.2d 663, (P.Ct. Summit County, Ohio1993); *In re Ingram* 689 P.2d 1363 (Wash. 1984). See also FURROW, *supra* note 1, at 677. There is the risk of individuals deemed social undesirables would be declared dead under the higher brain criteria. Other valid concerns are the lack of certainty as to how much brain dysfunction is necessary and worry about policy making in the future. Kristi E. Schrode, *Life in Limbo: Revising Policies for Permanently Unconscious Patients*, 31 HOUSTON L.REV. 1609, 1644 (1995). But see VA. CODE ANN. § 54.1-2972 (Michie 1998).

129. Daniel Wilker et al., 261 JAMA 2246, 2246 (1989).

There is little likelihood of, or reason for, a return to the simple heart-lung definition. The higher brain functions, on the other hand, cannot and should not be embodied in the law unless and until fully reliable diagnostic tests are developed; even then, adoption of this definition should await the marshalling of professional and public support, based on a clear understanding of what is involved.

*Id.*

130. See Forster, *supra* note 19, at 139.

ture, and society, which have impacted the acceptance of brain death in many ways.<sup>131</sup> Currently, brain death equals human death only in cases in which the patient gives advanced written consent to become an organ donor and the family approves.<sup>132</sup> Otherwise, death is official only when the heart stops beating.<sup>133</sup> Organs have been in short supply for many years in Japan, but the passage of the organ transplant bill permits heart, liver, lung, and pancreas transplants and could increase the number of kidneys available, thereby helping to reduce the global demand for organs.<sup>134</sup> Nonetheless, for many Japanese, when a doctor tells a patient that he or she will need a transplant, it is almost a death sentence.<sup>135</sup>

A collaborative study was performed in March 1997 to examine the present status of legislation and public attitudes toward brain death between 1992 and 1996.<sup>136</sup> The study reported on many Asian countries and discussed the difficulties encountered concerning organ donation and transplantation.<sup>137</sup> The study outlined types and numbers of transplants. Japan emerged as the country with the highest number of waiting patients with the fewest number of organ transplants of those Asian countries analyzed.<sup>138</sup>

As a result of the imbalance, Japan's organ shortage raises serious concerns about going overseas to obtain organs donors.<sup>139</sup> Many Japanese patients receive transplants in the United States, United Kingdom, and other countries;<sup>140</sup> however, because of the costs involved, only wealthy Japanese people can

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131. See ORGAN TRANSPLANTATION: MEANINGS AND REALITIES 9, 13 (Stuart J. Younger et al. Eds., 1996) [hereinafter ORGAN].

132. See Akira Akabayashi, *Japanese Parliament Passes Brain-Death Law*, 349 LANCET 1895, 1895 (1997).

133. See Michael A. Lev, *Amid a Need for Organ Donors, Japan Debates Brain Death. Two Bills Challenge Spiritual Belief*, CHICAGO TRIBUNE, Apr. 15, 1997, available in WL 3538619.

134. See Forster, *supra* note 19, at 109.

135. See Sheryl WuDunn, *In Japan, Use of the Dead Has the Living Uneasy*, N.Y. TIMES, May 11, 1997, at C1.

136. See H. Takagi, *Organ Transplants in Japan and Other Countries*, 29 TRANSPLANTATION PROC. 3199, 3202 (1997).

137. See *id.* The countries in the survey included Bangladesh, Hong Kong, India, Indonesia, Korea, Malaysia, Pakistan, The Philippines, PR China, Singapore, Taiwan, Thailand, and Japan. See *id.*

138. See *id.* Another noteworthy piece of data concerns the status of the living organ donor. Between 1993-1993, out of 2,305 total transplant cases, 1,566 were related to the recipient of the organ. No other country in the survey displayed such a high correlation given the higher number of total cases compared to the other countries. See *id.*

139. See Gorshine, *supra* note 54, at 29.

140. See Hironori Toshima et al., *Why is Heart Transplantation Not Performed in Japan. Refutation of Dr. Yoshio Watanabe's Arguments Against Heart Transplantation*, JAPAN HEART J., Jan. 1995, at 13, 219.

travel elsewhere for an organ transplant.<sup>141</sup> The number of Japanese who actually travel abroad for the procedure is difficult to obtain because the Transplant Society and other organizations want to avoid controversy so records are not kept.<sup>142</sup>

Critics claim that the strict prohibition on heart and liver transplants burden individuals in other countries by lessening or eliminating their chances of obtaining an organ within their own country.<sup>143</sup> There are organ shortages in every country, but Japan is exceptional because of the unwillingness of the Japanese to donate organs.

### *Background*

In Sapporo, Hokkaido 1968, Japan's first and only heart transplant was performed by Dr. Juro Wada.<sup>144</sup> Immediately after, the transplant produced a flurry from the Japanese media and was regarded as a medical triumph.<sup>145</sup> In this case, a twenty-year-old drowning victim was diagnosed as brain dead without legal backing, an official declaration of brain death, or a consultation with a second medical team.<sup>146</sup> Consequently, the government charged Dr. Wada with the double murder of the organ donor and the recipient who died several months later. Wada was arrested and acquitted six months later. In retrospect, many Japanese did not view the heart donor as brain dead nor the recipient of the organ as in great need of a new heart to justify the surgery.<sup>147</sup> At the time no brain death laws were in effect. As a result of the Wada case the issue of organ transplants has been hotly debated since 1968.

There have been other cases involving organ transplants in which Japanese doctors have not appeared in a good light.<sup>148</sup> In one case, although the patient and her family did not consent to

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141. Forster, *supra* note 19, at 110.

142. *See id.*

143. *See* Gorshine, *supra* note 54, at 29. Some comment that Japan's lack of organ transplant legislation "is an embarrassment for one of the world's most advanced medical-technological countries." *Id.*

144. *See id.* at 30.

145. *See* Lock, *supra* note 10, at 584.

146. *See* Lev, *supra* note 133.

147. *See id.* Currently, the Wada case is considered as a "barbarous piece of medical experimentation carried out by a doctor who, significantly, had received a good portion of his training in America." *Id.* *See* Forster, *supra* note 19, at 121. Dr. Wada never made a public apology.

In Japan, great weight is placed on apology as a means of assuming moral responsibility, even if the legal system does not charge the individual. *See generally* Hiroshi Wagatsuma, *Implications of Apology*, 20 L. & SOC'Y R. 461 (1986). *See also* Toshima, *supra* note 139 at 20. The donor involved in the Wada case had rheumatic valvular disease. The recipient died 83 days after the surgery.

148. ORGAN, *supra* note 131, at 9.

the procedure,<sup>149</sup> the kidney and pancreas were removed from a young mentally retarded woman who was diagnosed as brain dead at Tsukuba University.<sup>150</sup> Also, in 1989, a doctor at the Hamamatsu National Medical School was arrested for fraud after receiving more than twenty million yen<sup>151</sup> from a patient in exchange for finding a kidney donor.<sup>152</sup> These cases, combined with a growing distrust toward physicians, prevented many organ transplants from being performed again.

### *Defining Brain Death in Japan*

The movement to pass legislation governing the issue of brain death began in May 1968.<sup>153</sup> However, following the Wada incident the same year, both the public and the medical community were silenced.<sup>154</sup> The development of a definition of brain death for organ transplant purposes proceeded slowly. The first definition of brain death in Japan was formulated in 1974 by the Japan Electroencephaly Association.<sup>155</sup> The next step would not be taken for another ten years when the Life Ethics Problem Study Parliamentarians League, composed of twenty-eight Diet members and forty-five other professionals, was established in 1985.<sup>156</sup> The next year, this group argued that legislation on brain death was needed. During 1986, the Ministry of Health and Welfare established the Brain Death Advisory Panel consisting of eight neurologists who examined medical records of more than seven hundred cases of brain death.<sup>157</sup> The report stated that death cannot be judged by brain death and led other groups to voice their position on the brain death debate.<sup>158</sup>

Nonetheless, in January of 1988, the Japan Medical Association voted unanimously to accept brain death as the end of life.<sup>159</sup> Five conditions must be met before someone can be de-

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149. See ORGAN, *supra* note 131, at 9.

150. See *id.* at 147.

151. This is equivalent to about \$120,000 USD.

152. See *id.* In Japan, it is illegal to buy and sell human organs. However, the Japanese have a long-standing custom of giving substantial presents to doctors to ensure good medical care, especially during surgery. Many Japanese believe that the commercialization of human organs is a possibility and maybe already a reality. See *id.*

153. See Akabayashi, *supra* note 131, at 47.

154. See *id.*

155. See ORGAN, *supra* note 131, at 149. See Forster, *supra* note 19, at 125 (explaining mandatory criteria for the definition of brain death).

156. See *id.*

157. See ORGAN, *supra* note 131; Akabayashi, *supra* note 131, at 47.

158. See ORGAN, *supra* note 131, at 149.

159. See *id.* at 149.

clared dead, as defined by the Japan Medical Association:<sup>160</sup> (1) deep coma; (2) dilation of pupils; (3) need for assisted respiration; (4) absence of brainstem response; and (5) a conformation that these conditions are satisfied after a six hour waiting period.<sup>161</sup>

Although the Japanese medical association accepted the definition of brain death, the medical community remains somewhat divided on the issue. For example, the Japan Association of Psychiatrists and Neurologists fears that if brain death defines the end of life, the handicapped, mentally impaired and disadvantaged may face a premature diagnosis of death to harvest their organs.<sup>162</sup> In another instance, a group led by Dr. Yoshio Watanabe, a renowned cardiologist at the Cardiovascular Institute, Fujita Health University School of Medicine, vehemently opposes brain dead organ donors.<sup>163</sup> Dr. Watanabe's opposition to heart transplantation stems from the idea that brain death is not the death of the person.<sup>164</sup> Physicians are not alone in expressing concern that a brain dead diagnosis could lead to a general erosion of respect for patients.

The Patient's Rights Committee is another important group in the dispute over brain death.<sup>165</sup> The committee was formed in 1983 by a group of physicians mostly from Tokyo University Hospital.<sup>166</sup> The goal of the party is to protect the rights of patients in all fields of medicine; however, most of its energy has been focused on its opposition to brain dead organ donors.<sup>167</sup> The

160. See Ed Gutierrez, *Japan's House of Representatives Passes Brain-Death Bill*, 349 LANCET 1304, 1304 (1997).

161. See *id.*

162. See ORGAN, *supra* note 131, at 149.

163. See Toshima, *supra* note 139, at 14.

164. See *id.* Dr. Watanabe comments,

[i]t is incorrect to say that the heart of the patient in a state of brain death is only kept working artificially by a respirator. This is because the heart has the capacity for automatic movement and works spontaneously, as is known from the fact that the heart excised from living organisms continue to beat for any number of hours when perfused via the coronary artery with perfusate containing oxygen, and is not the case that the heart is made to contract and dilate artificially.

*Id.* However, it is important to note that brain-dead patients usually experience cardiac death within an average of one week, despite use of a respirator. In the 1960's, it was common practice in Japan for neurosurgeons and neurologists to turn off a respirator on a brain patient and return in twenty minutes after the heart stopped to declare the patient dead. See *id.*

165. See ORGAN, *supra* note 131, at 149; Forster, *supra* note 19, at 112.

166. See Forster, *supra* note 19, at 112.

167. See *id.*; see ORGAN, *supra* note 131, at 149-50. Under the leadership of Dr. Honda from the Department of Internal Medicine at Tokyo, the committee has filed lawsuits in connection with brain dead donors. One suit involved a Niigata hospital where the kidneys of a brain dead patient were removed. In another case, a doctor who is a Buddhist priest disconnected a respirator on a comatose woman and re-

group believes that organ transplants jeopardize the rights of both the donor and the recipient for three major reasons. First, members feel that transplant surgeons would not properly treat patients because they want to harvest their organs.<sup>168</sup> The group also fears that doctors might misdiagnose brain death.<sup>169</sup> Lastly, the group questions whether or not doctors will obtain the proper informed consent from the donor and the donor's family.<sup>170</sup>

In an attempt to resolve the confusion, the Japanese government set up the Special Cabinet Committee on Brain Death and Organ Transplants in 1989.<sup>171</sup> In January 1992, this advisory committee pronounced a definition of death similar to the one advanced by the Japanese Medical Association in 1987.<sup>172</sup> The report generated by the committee stated that brain death was equivalent to death for organ transplant purposes. This action broke the long held definition in Japan that death occurs when the heart stops beating.

### *Legal Issues Involving Brain Death*

Currently, there are two statutes concerning organ transplantation in effect in Japan. The first statute, An Act Relating to Cornea Transplants, was passed in 1957.<sup>173</sup> The Act allowed cornea transplants to be performed under two conditions: (1) the donor's family had to consent to the removal, and (2) doctors must have a specific recipient chosen.<sup>174</sup> In 1979, this act was amended to include kidney transplants and was renamed An Act Concerning Transplantation of Cornea and Kidneys.<sup>175</sup> Under the new Act, family consent is required when there is no written

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moved her kidneys and corneas in accordance with her living will and consent of her family. *See id.* These cases were filed brought to the court before the Organ Transplant Law was effective.

168. *See* Michael C. Brannigan, *A Chronicle of Organ Transplant Progress in Japan*, 5 *TRANSPLANT INT'L* 180, 180 (1992).

169. *See id.*

170. *See id.*

171. *See* ORGAN, *supra* note 131, at 142. The committee was made up of fifteen members and its goal was to furnish the prime minister with a report by 1991. The group was so divided on the issue of brain death equating with human death that for a while it seemed as if a report would never be generated. *See id.*

172. *See* Alun Anderson, *Edging Toward Transplants*, 318 *NATURE* 591, 591 (1985). The five symptoms taken to define death are: deep coma, loss of spontaneous breathing, enlargement of both pupils to more than four millimeters; loss of reflexes governed by the brain stem; and flat brain waves all lasting six hours. Certain cases are excluded such as young children whose power of recovery could be higher and those caused by poisons. *See* Ed Gutierrez, *Japan's Organ-Donor Bill Under Legislation*, 348 *LANCET* 1727, 1727 (1996).

173. *See* Forster, *supra* note 19, at 111.

174. *See id.* at 111-12.

175. *See id.*; Gorshine, *supra* note 54, at 29.

consent from the patient and commercialization of organs is illegal.<sup>176</sup> The specific recipient requirement was eliminated altogether.<sup>177</sup>

The long debate on organ transplantation ended on October 16, 1997 when the Organ Transplant Law was passed.<sup>178</sup> The law included detailed regulations<sup>179</sup> and required the determination of brain death for the following transplants: heart, lungs, liver, kidneys, pancreas, small intestines and eyeballs.<sup>180</sup> Some of the more notable regulations are as follows:

\* Sidestepping the issue of the legal definition of death, the law states that brain death signifies human death only when a donor is examined and confirmed to be brain dead by two or more doctors; only then can the organs be retrieved and transplanted.

\* To confirm brain death, physicians are required to check for deep coma, lack of pupil movement, disappearance of brain stem response, flat brain wave, and disappearance of brain stem auditory evoked response.

\* Children age five or younger, drug addicts, and patients with low temperatures should not be considered as donors.

\* Japanese citizens age fifteen or older are allowed to express their willingness to be donors; however, their wishes may be overruled by the person's partner, children, parents, grandparents, grandchildren or other relatives living with the potential donor.<sup>181</sup>

The original bill was drafted based on a recommendation made in January 1992 by an ad hoc government advisory panel on brain death and organ transplants that authorized transplants

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176. See Gorshine, *supra* note 54, at 29.

177. See Forster, *supra* note 19, at 111.

178. See Akabayashi, *supra* note 132, at 47. See generally THE EUROPA WORLD YEAR BOOK 1805 (Gresham Press, 38<sup>th</sup> ed. 1997). In Japan, under the Constitution of 1947, the Emperor of the Head of State but has no governing power. The legislative power is vested in the bicameral Diet, that consists of the House of Representatives (the lower house with 500 seats), whose members are elected for four year terms, and the House of Councilors (the upper house with 252 seats), whose members are elected for six year terms. The Diet is convened once a year and has exclusive legislative authority. A bill becomes law having passed both Houses except where provided by the Constitution. If the House of Councilors either vetoes or fails to take action upon a bill already passed by the House of Representatives within 60 days, the bill becomes law when passed a second time by the house of Representatives, by at least a two-thirds vote among those present. The Prime Minister is designated by the Diet and the Cabinet is responsible to the Diet. See *id.*

179. See *Japanese Struggle to Implement New Brain Death Law*, TRANSPANT NEWS, Oct. 18, 1997 available in 1997 WL 8941145.

180. See *Organ Transplant Nixed After Qualified Donor Dies*, JAPAN ECON. NEWSWIRE, Jul. 4, 1998, available in WL JWIRE 01:11:00. Brain death is not a prerequisite for the transplant of other minor organs. Doctors could remove skin from the patient after the heart has stopped, according to family wishes.

181. See *Organ Transplant Nixed After Qualified Donor Dies*, *supra* note 180.

from brain dead individuals.<sup>182</sup> The bill was set aside because of many controversial points, including a provision that allowed a potential donor's next of kin to infer the intentions of the patients.<sup>183</sup> This provision was a magnet for criticism from some citizens' groups and the national bar association for being a vague standard for organ donation.<sup>184</sup> The Lower House of the Japanese Diet voted on the original bill on April 24, 1997; it passed with 320 for and 148 against.<sup>185</sup>

Next, a revised version of the organ transplant bill was passed in the Upper House with 181 for and 62 against on June 17, 1997.<sup>186</sup> The revised bill amended the controversial provision to allow transplants only when the donor had given advanced written consent and the family accepts a medical diagnosis of brain death and allow the removal of his organs for transplantation.<sup>187</sup> Notably, the family can refuse to accept a brain death diagnosis irrespective of the donor's consent. On the same day, the bill was finally approved in the Lower House with 323 for and 144 against.<sup>188</sup> After an almost thirty year debate, the law went into effect four months later on October 16, 1997.

### *The Future for the Organ Transplant Law and Procedure*

Many advocate broadening the scope and revising the Organ Transplant Law.<sup>189</sup> The law has been enacted, but it is still very difficult for individuals to receive organs transplants in Japan. Although the new law allows doctors to declare brain death, families can veto the diagnosis.<sup>190</sup> Doctors argue that the family veto loophole allows the possibility for two patients in the same brain dead condition to be diagnosed differently.<sup>191</sup> Some argue that the very narrowly worded law will not increase the number of organs for transplant—especially the heart.<sup>192</sup>

Another discouraging factor of the Japanese organ procurement system is the small number of facilities that offer organs,

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182. See Takagi, *supra* note 136, at 3201.

183. See *id.*

184. See *id.*

185. See Akabayashi, *supra* note 132, at 47.

186. See *id.*

187. See Takagi, *supra* note 136, at 3201.

188. See Akabayashi, *supra* note 132, at 47.

189. See Takagi, *supra* note 136, at 3202.

190. See *Organ Transplants Face Tough Going in Japan Despite Legislation, Cultural and Religious Beliefs Cause Obstacles*, ROCKY MOUNTAIN NEWS, Oct. 19, 1997, available in 1997 WL 14967246 [hereinafter *Obstacles*].

191. See *Obstacles*, *supra* note 190.

192. See Takagi, *supra* note 136, at 3202; *Obstacles*, *supra* note 190. Japan's leading transplant surgeon, Hidetoshi Matsunami, comments that he will still have to send some patients abroad as he has been doing so. Matsunami said, "Even with the new legislation, I still do not feel assured." *Id.*

which is limited to ninety-six in 1998 for the entire country.<sup>193</sup> Sometimes it appears that every effort is put into preventing a potential donor from a diagnosis of brain death by ensuring that the decision making process follows overly stringent guidelines.<sup>194</sup> However, concurrently, hospitals must make efforts to dispel the impression that they are failing to respond to the need for organ transplants.<sup>195</sup>

The Japanese system forbids any organ donations unless the donor is in possession of a donor card in which consent has to be clearly expressed; the donor card is then accepted as advance written consent.<sup>196</sup> Following this requirement, family consent is also needed.<sup>197</sup> Unfortunately, the distribution of donor cards has been slow.<sup>198</sup> The government should examine the possibility of having a driver's license to serve a dual role as donor cards to promote advance written consent.<sup>199</sup> Because the distribution process provides the best opportunity to inform the public about organ transplants, the government should find more effective means to make the cards more accessible.<sup>200</sup>

The law was meant to clear the way for organ transplants from brain dead donors. However, one group not reaping any benefits from the new legislation are those individuals under the age of fifteen. The law excludes anyone under the age of fifteen from donating organs and the hospitals ban any tests to declare

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193. See *Obstacles*, *supra* note 190; *Japanese Struggle to Implement New Brain Death Law*, *supra* note 179. It is estimated that only about one in three hospitals are equipped to comply with the strict guidelines of the transplant law. Most of the designated hospitals are university hospitals designated by the ministry, while others have been named by the Japanese Association for Acute Medicine as institutions that are allowed to remove organs from brain-dead patients. See *id.*

194. See Keiko Nakamura, *Organ Transplant System Still Needs Work*, NIKKEI WKLY., May 11, 1998, at 14. "A high premium is placed on a rigorous process of 'informed consent,' making certain that extensive discussions and explanations be conducted with the concerned families before a donation can be approved." *Id.*

195. See *Why No Organ Transplants*, YOMIURI SHIMBURN, Apr. 24, 1998, available in 1998 WL 6592418.

196. Others stress promoting the use of donor cards as an advance written consent.

197. See Nakamura, *supra* note 194, at 14.

198. Between October 1997 and May 1998, the government distributed about 10 million cards. According to a survey conducted by the newspaper, 20 of the respondents wanted a donor card, five percent actually had one and fifty-three percent said they did not know how to get one. See *Why No Organ Transplants*, *supra* note 195. According to the Japan Organ Transplant Network, 23 million cards have been distributed nationwide. The donor cards and instructions have been handed out in post offices, municipal government buildings, and on the streets. A newspaper survey found that three percent of the 2,229 respondents carried donor cards. See *Japan: One Year Later, Transplant Law Controversy Rages On*, ASAHI SHIMBUN, Oct. 16, 1998, available in 1998 WL 12790234.

199. See *Why No Organ Transplants*, *supra* note 195.

200. See *id.*

children under the age of six as brain-dead.<sup>201</sup> The law may need to change in the future to adjust to the needs of children who currently have no hope of receiving organs of the appropriate size.<sup>202</sup>

In practice, doctors must constantly review criteria in light of new studies and technologies.<sup>203</sup> A memo was recently published encouraging a different way to check the "non-respiratory test" required in the new organ transplant law.<sup>204</sup> The memo stated that doctors should measure the concentration of carbon dioxide in the patient's blood compared with a ten-minute check for respiration.<sup>205</sup> Many hurdles lie ahead for the Japanese people and maximizing the effectiveness of the new law becomes more of a priority.

### *Japanese Perceptions of Brain Death Recognition*

When author Kunio Yanagida, who has written books about cancer and dying, recalls his son's slow ebb toward death, there is a point at which he abandons his knowledge of science and must accept that he is Japanese:

As a Japanese, from an emotional point of view, as long as my son was still warm and his heart was still beating, it was very difficult to accept that he was brain dead.<sup>206</sup>

Brain death is death from a medical standpoint. However, this diagnosis does not always correspond with the families' views of death.<sup>207</sup> The notion of perfectionism plays a part in the brain death dilemma. Some say that the Japanese have an utmost fear of false positives<sup>208</sup> thereby intensifying the risks associated with brain death.<sup>209</sup> Other Japanese ideas about recognizing brain death include: agreement in principal, insistence on unanimity, and death as a process.

201. See ShinoYuasa, (ADDA official comments and editorial), AGENCE FRANCE-PRESSE, Oct.16, 1997, available in 1997 WL 13414900.

202. See *id.*

203. See *Minds at Work/Brain Death Criteria Reviews Urged*, YOMIURI SHIMBUN, Nov. 5, 1997, available in 1997 WL 15878581.

204. See *id.* The test has been called the Takeuchi Criteria after its advocate, Kazuo Takeuchi, who is the president of Kyorin University in Tokyo.

205. This method was advocated for two reasons: (1) devices to measure carbon dioxide in the blood are used by hospitals across in nation, and (2) patient's family's worry too much when artificial respiration devices are removed for 10 minutes. See *id.*

206. Lev, *supra* note 133.

207. See Shin Ohara, *The Brain Death Controversy: The Japanese View of Life, Death, and Bioethics*, JAPAN FOUND. NEWSL., Aug. 1997, 1, 4.

208. See Haruko Akatsu, *The Heart, the Gut, and Brain Death in Japan*, HASTINGS CENTER RPT., Mar.-Apr. 1990, at 2.

209. See Akatsu, *supra* note 208, at 2.

Many opinion surveys show that the Japanese agree with brain death as the end of life in principal, but when it comes down to actually following it, many refuse.<sup>210</sup> In practice, many are anxious that doctors may not adhere to the principal "no intervention must be performed that is not in the patient's interests and before death has been determined."<sup>211</sup> Also, Japanese society insists on unison, with the national government deciding on the issue of brain death.<sup>212</sup>

The Japanese view death as a process and pin-pointing the time when brain death occurs would be against many Japanese's wishes.<sup>213</sup> Some feel that "dying remains a process into which scientific intrusion is often resented, and, furthermore, little pressure is exerted to formalize a distinct demarcation between life and death. . . ." <sup>214</sup> Many Japanese television programs, magazine articles, and books have consistently cast doubt on whether death can be understood as a diagnosable event.<sup>215</sup>

### *Religious Issues Affecting the Acceptance of Brain Death*

Considering Japan's scientific, medical, technological, economic, and educational sophistication, it is highly possible that the resistance to brain death and brain death donation is due to another variable.<sup>216</sup> Major forces in shaping Japanese attitudes toward brain death are philosophical, cultural, Buddhist, Shinto, and Confucian perspectives.<sup>217</sup> The traditional religions of Japan are Shintoism and Buddhism<sup>218</sup> and most Japanese are followers of both religions.<sup>219</sup> A central principle of Japan's ancestral beliefs is the idea that the welfare of the living is contingent on respect for the dead.<sup>220</sup> Cultural taboos are strong and have

210. See Ohara, *supra* note 207, at 1.

211. Motashi Takao, *Brain Death and Transplantation in Japan*, 340 LANCET 1164, 1164 (1992).

212. See Ohara, *supra* note 207, at 2. Some say the Japanese should only establish the medical facilities and publicize their existence so all members of the public are aware of them. See *id.*

213. See Lock, *supra* note 10, at 595.

214. *Id.*

215. See *id.* at 585.

216. See ORGAN, *supra* note 131, at 13.

217. See Forster, *supra* note 19, at 116. But see Jiro Nudeshima, *Obstacles to Brain Death and Organ Transplantation*, 339 LANCET 1063, 1064 (1991). Barriers within the medical community such as lack of peer review and assessment of new technology are to blame for the obstacles that Japan is experiencing, not religion or cultural feelings. See *id.*

218. See THE EUROPA WORLD YEAR BOOK, *supra* note 178, at 1819.

219. See Forster, *supra* note 19, at 117.

220. See Eric A. Feldman, *Defining Death: Organ Transplants, Tradition, and Technology in Japan*, 27 SOC. SCI. MED. 339, 342 (1988).

raised many obstacles to acceptance of brain death and organ transplantation.

### *Buddhism*

The Japanese strongly subscribe to the Buddhist maxim against killing due to respect of others' lives.<sup>221</sup> The idea of sacrificing oneself to save a suffering person is consistent with Japanese virtue but receiving an organ through another's death leaves many Japanese uneasy.<sup>222</sup> There is a lingering Buddhist belief that the "spirit" incorporates every part of the body and thus no part should be removed.<sup>223</sup> The Japanese also believe in the concept of "being natural" stemming from Buddhism beliefs.<sup>224</sup> To some pronouncing a family member dead while his or her chest is still moving seems "unnatural."<sup>225</sup> Furthermore, strong Buddhist and cultural traditions forbid the removal of organs due to a belief that the corpse must be buried intact.<sup>226</sup> Some argue that receiving the organ transplant "denies the transitory nature of life and death by unnaturally fighting against it."<sup>227</sup> Additionally, the Japanese have great respect for the person long after death.<sup>228</sup> A widely followed Buddhist practice is the holding of a ceremony for the dead person years later.<sup>229</sup>

Japan's largest lay Buddhist organization, Soka Gakkai, wields significant power in Japanese society and politics.<sup>230</sup> The organization announced in 1995 that it would recognize brain death as a termination of life once the medical community

221. See Handa, *supra* note 1, at 439.

222. See *id.*

223. See Ed Gutierrez et al., *Japan Signals Desire to Ease Restrictions on Transplantation*, 348 LANCET 1373, 1373 (1996).

224. See Akatsu, *supra* note 207, at 2; See also, Makio Tatemura, *The Buddhist View of Death*, HASTINGS CENTER RPT., Mar. 1992, at 128, summarizing the basic view of Buddhism regarding death as:

Man is born, lives his life-time, and with death he enters an intermediate state between birth and death. He remains in this state for forty-nine days at the longest and then attains a new life somewhere, according to his past deeds (karma).

*Id.*

225. See Tatemura, *supra* note 224, at 128.

226. See Williams, *supra* note 54, at 331; Lev, *supra* note 133. Some Japanese families have not donated their corneas because it is believed that the spirit will need eyes to reach the other side. See *id.*

227. See Forster, *supra* note 19, at 118.

228. See Kozo Tatara, *On Putting Life First*, 346 LANCET 327, 327 (1995).

229. The Buddhist custom of holding a ceremony after 1, 3, 7, 13, 17, 23, 33, and 50 years following death. See *id.*

230. See Catrien Ross, *Towards Acceptance of Organ Transplantation*, 346 LANCET 41, 42 (1995); ROBERT S. ELLWOOD ET AL. JAPANESE RELIGION 8 (Robert S. Ellwood, Jr., ed. 1985). Soka Gakka has great popular appeal, and speaks authoritatively and appealingly to those seeking meaning, purpose, and community. See *id.*

reaches a consensus.<sup>231</sup> This statement may have gone a long way into aligning religious views with acceptance of brain death and organ transplants. Some stress it is important for Buddhists to think about this problem for themselves and make an individual decision.<sup>232</sup>

### *Shintoism*

Shintoism is the native religious system of Japan that honors ancestors and nature.<sup>233</sup> According to Shinto beliefs, a spirit of the deceased will be content if there is no violence to the body.<sup>234</sup> If the death was violent, the spirit could suffer and there could be harm to the living.<sup>235</sup> Many Japanese feel that organ removal constitutes violence and conflicts with Shinto beliefs.<sup>236</sup>

### *Confucianism*

For many hundreds of years, Japanese social life has been based on Confucianism.<sup>237</sup> The religion prohibits all tampering with dead bodies.<sup>238</sup> It is possible that organ removal could easily be regarded as "tampering." Another fundamental principal is the value of loyalty to the family and families see themselves as part of extended families that are deeply rooted.<sup>239</sup> An important Confucian concept that the body is a gift of one's parents that cannot be given away.<sup>240</sup> This idea clearly conflicts with the entire concept of organ transplants.

### *Japanese View of the Person and the Mind-Body*

For the Japanese, the body—whether it be living, dead, or dying—is not distinct from the mind or soul.<sup>241</sup> For most Japanese, the heart (*kokoro*) or gut (*hara*) is the master organ of the

231. See Ross, *supra* note 230, at 42.

232. "No pressure must be put on those who take it [organ transplants] negatively, while on the other hand, an offer coming genuinely from good intention must not be ignored without good reason." Tatemura, *supra* note 224, at 128.

233. See H. BYRON EARTHART, RELIGIONS OF JAPAN 16 (H. Byron Earhart ed., 1984); THE EUROPA WORLD BOOK, *supra* note 178, at 1819.

234. See Forster, *supra* note 19, at 118.

235. In the past authorities or families would injure the corpse to punish the dead person. See Forster, *supra* note 19, at 118.

236. See *id.*

237. See ORGAN, *supra* note 131, at 157.

238. See *id.*

239. See Ellwood, *supra* note 229, at 130.

240. See David Swinbanks, *Japan Reaches a Compromise on Organ Transplants*, 387 NATURE 835, 835 (1997).

241. See Eric Feldman, *Medical Ethics the Japanese Way*, HASTINGS CENTER RPT., Oct. 1985, at 24.

body, not the brain.<sup>242</sup> The notion of the brain being the key for life is foreign to many Japanese.<sup>243</sup> Similarly, some Japanese also believe that the body is as sacred as the mind, and respect the time-honored idea of the mind and body as one.<sup>244</sup> Japanese question whether the balance of the spirit may be maintained if certain parts of the body are taken out or replaced.<sup>245</sup> Moreover, traditional Japanese view human life and death on a communal basis—the whole society gets involved with the event.<sup>246</sup> Due to this collective reality concept of society, the brain-oriented definition of death is largely unacceptable.<sup>247</sup>

### *Other Cultural Issues*

Japan also lacks a system for responding to public opinion. Japanese society operates under a very paternalistic structure. A few professions or officials make all or most of the important decisions.<sup>248</sup> Generally, physicians are highly respected by citizens and this behavior traces its roots to a widespread deference to people in authority and power.<sup>249</sup> Despite the deference, Japanese people are reluctant to trust doctors to perform organ transplants.<sup>250</sup> In addition, in dealing with situations involving a terminally ill patient, a doctor typically will not tell the patient of their prognosis.<sup>251</sup> Many doctors believe the patient's inevitable sadness will prevent them living from fully living their final days.<sup>252</sup> Some advance that physicians should balance the pa-

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242. See Akatsu, *supra* note 207, at 2; Robert B. Leflar, *Informed Consent and Patients' Rights in Japan*, 33 HOUS. L.REV. 67, 68 (1996).

243. For example, in Japanese, someone "being good and honest" is said to "have clean gut." Also, to "have a heart-to-heart talk" in Japan is to "open up one's gut." See Leflar, *supra* note 242, at 68.

244. See Handa, *supra* note 1, at 439.

245. See *id.*

246. See Nudeshima, *supra* note 217, at 1063.

247. See *id.*

248. See *id.* at 1064. Currently, most Japanese are not ready to give up their paternalistic system. See Norio Higuchi, *The Patient's Right to Know of a Cancer Diagnosis: A Comparison of Japanese Paternalism and American Self-Determination*, 31 WASHBURN L.J. 455, 473 (1992). Most issues dealing with patient's interests have been decided in the Tokyo headquarters of the Ministry of Health and Welfare through private discussions with the Japan Medical Association, the pharmaceutical companies, or in an ad hoc fashion at individual hospitals. See Leflar, *supra* note 242, at 73.

249. See Feldman, *Medical Ethics the Japanese Way*, *supra* note 241, at 21.

250. See *id.* at 24.

251. See Tatara, *supra* note 227, at 327.

252. See *id.* See, also, Atsushi Asia et al., *Attitudes of Japanese and Japanese-American Physicians Toward Life-Sustaining Treatment*, 346 LANCET 356, 357 (1995). "A Japanese physician expressed his agony at making decisions about life-sustaining interventions, 'We have to prolong the life of the terminally ill patients because we do not inform them of the truth.'" *Id.*

tient's suffering with the blind use of life-prolonging technology.<sup>253</sup>

Furthermore, patients' relatives play an important role in the Japanese hospital and have a considerable amount of communication with the doctor involved.<sup>254</sup> Families are often at the bedside of the patient and perform nursing duties throughout the hospital stay and the family commonly washes the corpse and lays it out after death.<sup>255</sup> Doctors are often hesitant to ask the family for consent while the patient is still breathing and warm.<sup>256</sup> This situation does not lend itself to a diagnosis of brain death for the subsequent removal of organs.

### CONCLUSION

Organ transplants have been the primary reason for accepting a brain death standard. Cultural forces construct boundaries affecting the level of acceptance of brain death. The United States and Japan both accept whole the concept of brain death. In the United States, laws on brain death vary by state, but all states recognize that death can be determined by the irreversible cessation of brain function. This makes it possible to remove vital organs such as the heart, lungs, and liver from brain dead patients.

For many Japanese, brain death has been the source of both confusion and fear which was further inflamed by the 1968 Wada incident. However, Japan entered a new phase of dealing with brain death when the country passed the nationwide Organ Transplant Law in October of 1997. It will take time for the Japanese culture to fully embrace the concept of brain death. A system must be established to suit people best and reflect their cultural tradition and customs. Positive publicity and public education are excellent starting points to overcome the negative feelings associated with the diagnosis of brain death and organ transplants. Organ transplants will never become an accepted practice in Japan without mutual confidence between physicians and patients.

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253. See Tatara, *supra* note 227, at 327.

254. See Forster, *supra* note 19, at 119.

255. See *id.* at 119.

256. See *id.*

