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LEGAL DEFINITIONS OF DEATH

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Introduction

Until the 1960s, jurists were not particularly concerned with the task of legally defining death. Up to that time it was self-evident that death occurs when cardiopulmonary functions permanently cease, and there was relatively little need to determine the precise moment of death. In common-law jurisdictions a murder conviction could only be obtained if the victim died within a year and a day of the offending blow, and for estate distribution purposes it was sometimes necessary to know which of two or more persons died first when both or all were victims of a common disaster. However, for the most part, the timing of death was unimportant, and the commonsense notion of cessation of cardiopulmonary function sufficed. After all, the lungs and heart comprise the means by which oxygenated blood is delivered to the rest of the human body, without which all human tissue soon dies.

The movement for a precise legal definition of death arose for three distinct reasons. First, the invention of mechanical devices, such as the ventilator, made it possible to induce respiration and blood circulation in patients who were no longer able to perform these functions autonomously due to irreversible destruction of the brain. Second, the advent of organ transplantation as a practical therapy led to the use of cadaver organs for that purpose. Third, the development of the electroencephalogram and agreed-upon medical criteria made it possible to determine that a person who still retained naturally or artificially supported heart and lung function could no longer return to a cognitive, sapient life.

In light of these developments, jurists have been pressed over the past 30 years to develop legal criteria of death that would permit the removal of nontwin organs and the removal of life support from brain-dead patients. As a result, the undoubted trend has been toward accepting whole-brain death, i.e., permanent cessation of functions by the cerebrum, cerebellum, and brainstem, as the legal definition of death. Many countries now have statutes or regulations that incorporate this standard, establishing the procedures for declaring patients legally dead and the circumstances under which some or all of their organs may be removed for transplantation.

Despite the overall trend outlined above, death definition statutes differ in several interesting respects. They differ in the extent to which they focus on transplantation and in the type and specificity of the definition of death they incorporate. In addition, transplantation statutes differ with respect to whether or not they adopt a unitary definition of death. A unitary definition is usually thought of as one that defines death solely in terms of a single criterion or set of criteria (e.g., whole-brain death, higher brain death, permanent cessation of respiration). However, statutes also differ with respect to whether they require a unitary result, given that a particular criterion or set of criteria has been met. In other words, will a statute embodying a brain-death standard always lead to the conclusion that the patient is dead after it has been determined in any given case that he/she has met the criteria of whole-brain death? Perhaps surprisingly, not all statutes insist upon this type of unity.

In addition to the factors that distinguish from one another the legal definitions of death embodied in statutes, there is also the interesting question of how these statutes in general compare to norms embodied in traditional, religious systems of law. The claim has been made that modern transplantation statutes bypass the sanctity of life ethic common to the world's great religions. However, religious legal systems have themselves responded in different ways, adopting for the most part whole-brain death definitions of death. Within their respective religious traditions, these definitions are authoritatively regarded as wholly compatible with the sanctity of life ethic, rather than as a new, incompatible ethic.

Definition of Death in Religious Legal Systems

There is no provision in the 1983 Code of Canon Law concerning the definition of death. Therefore, one cannot say that there is any explicit, binding norm within the Catholic tradition. However, in an address to the Eighteenth International Congress of the Transplantation Society (2000), Pope John Paul II defined death as the literal disintegration of the unitary person, resulting from the separation of the soul from the corporeal body. The Pope expressed indifference as to the criteria a professional health worker might employ to determine that a patient has arrived at the state of death, as long as certain proof is provided, albeit through inference only, of the disintegration of the person into his/her spiritual and corporeal parts. Speaking in particular of the neurological criterion for inferring the fact of death, Pope John Paul II stated that it "consists in establishing, according to the clearly determined parameters commonly held by the international scientific community, the complete and irreversible cessation of all brain activity in the cerebrum, cerebellum, and brain stem." Thus, it would seem that the Catholic Church accepts both the traditional cardiopulmonary and the modern whole-brain death criteria, on the ground that both, when properly applied, provide a sound evidentiary basis for the conclusion that death, i.e., the separation of the soul from the body, has occurred.

It should be noted that this position has received criticism within the Catholic community. Criticism tends to focus on three factors: (1) that there are no clearly determined parameters within the scientific community, nor any that are commonly held; (2) that no set of criteria can be rigorously applied without incorporating the traditional definition of death, since complete and irreversible cessation of all brain activity presupposes the destruction of the circulatory and respiratory functions as well; and (3) that the myriad sets of criteria proposed have become increasingly permissive.

The first of these criticisms is true up to a point. There is less certainty within the scientific community than was the case just ten years ago. However, recent concerns about the whole-brain death criterion are a natural reaction to its success in gaining widespread currency, and only serve to highlight that success. The second criticism is related to the first, since it reflects scientific skepticism about the whole-brain death standard. It is based on the fact that determination of death via electroencephalogram cannot detect the activities of cells deep within the brain. Therefore some cells may still be living. This supposition is consistent with outward physical evidence manifested by brainstem-dead patients, suggesting the presence of some neuron activity, even in dead brainstems. The third criticism ignores the fact that, while professing indifference toward the technical decisions involved in establishing criteria, the Pope's statement did carefully limit neurological criteria to those that confirm the existence of whole-brain death.

The situation in Islamic law closely resembles that in contemporary Catholic thought. There is no revealed or otherwise authoritative definition of death. The traditional definition of death in Islam, as in Catholicism, is separation of the soul from the body. The traditional criteria for determining that death has occurred are cessation of heartbeat and pulse. However, recent Islamic jurisprudence has concluded that the whole-brain death criterion is not in conflict with the definition of death. In fact, there is some indication in Islamic jurisprudence that the soul is especially associated with the functions of thought and volition, and that whole-brain death is therefore a better criterion of death than the cessation of cardiopulmonary functions.

In 1986, the Academy of Islamic Jurisprudence, a specialized body within the pan-Islamic Organization of Islamic Conferences, adopted a resolution, according to which a person is considered legally dead either when complete and irreversible cessation of the heart or respiration occurs, or when complete and irreversible cessation of all functions of the brain occurs, and the brain is in a state of degeneration. Brain death is defined as including death of the brainstem. The Academy has no powers of enforcement to carry out its resolutions, nor are they binding. However, its pronouncements are influential, and clearly have found their way into national legislation within the Islamic world. In Saudi Arabia, the Senior Ulama Commission's Decision no. 99 (1982) permits removal of organs if transplantation seems likely to succeed and organ removal poses no risk to the donor. Though obviously intended originally to regulate donations from live donors, this decision has been interpreted to permit removal of organs from patients considered legally dead from the time of determination of whole-brain death. The Council of Islamic Jurisprudence in Iran, in its Rulings Concerning Organ Transplantation, held that the criterion of death is cessation of the "normal" pulse and heartbeat, and that revival of the pulse through electronic intervention does not constitute life. Organs may therefore be removed from a whole-brain-dead patient, if he/she has so provided in a will. A number of other Islamic nations, including at least Kuwait, Tunisia, and Turkey have transplantation statutes and related regulations permitting removal of organs from whole-brain-dead patients. Some of these statutes refer to current scientific knowledge for the

criteria of death. In its 1985 statement on The End of Life, the Islamic Organization of Medical Sciences adopted a whole-brain death standard for determining when the patient has died. It reconfirmed this standard in 1996. Therefore, statutes referring to current medical knowledge incorporate the whole-brain standard of death indirectly.

Jewish law contains a more explicit, scriptural definition of death than either the Roman Catholic or Islamic religions. Both the Talmud and later authoritative codifications of the Talmud by Maimonides and Joseph Caro confirm that the criterion of death is the permanent cessation of respiration. Moreover, the weight of religious authority imposes upon the doctor a duty to heal and on the patient a corresponding duty to permit him/herself to be healed, since God owns the body and soul. Protection of the integrity of the body and soul applies equally to healthy and sick because both are equally created in the image of God. This sanctity of life principle is embedded in Israeli law both in the Basic Law on Human Dignity and Liberty (1992, amended 1994) and in the Penal Code. The former explicitly recognizes the "sanctity of life," and states that "there shall be no violation of the life, body, or dignity of any person as such." The Penal Code states that any act or criminally negligent omission in the performance of a duty will be regarded as having caused death if it hastens the death of one suffering from injury or illness, and imposes upon doctors an unqualified duty to care for their patients.

In addition, the permissibility of euthanasia is deeply embedded in Jewish legal tradition, despite the sanctity of life principle. According to a well-known gloss on the Shulchan Aruch of Joseph Caro, it is permitted to remove an impediment that is preventing a soul from departing. Thus, according to one recent analysis, the relevant distinction in discharging one's duty to the sick is not between act and omission, but between acts that hasten death and those that remove some factor holding back the soul's departure. There is some disagreement on the scope of this principle, concerning whether it only applies to patients who are in the final stages of dying, whether it permits the cessation of usual treatments (e.g., provision of food and oxygen) as well as unusual treatments, and whether it is only permissible if the patient is suffering great pain. However, it seems that most contemporary commentators believe this principle permits the disconnection of a terminally ill patient from a respirator. This is confirmed by *Shefer* v. *Israel* (1993), the only Israeli Supreme Court decision to address the issue (Table 1).

Thus, in practical terms Jewish law arrives at the same conclusion as Islamic and Roman Catholic law, that it is permissible to remove organs from patients who have suffered permanent whole-brain death. However, it is not entirely clear whether such patients are regarded as dead in Jewish law. In a 1987 directive concerning Brain Death and Heart Transplants, the Rabbinical Council of Israel found that complete and irreversible cessation of respiration can be inferred from confirmation that the entire brain has been destroyed, including the brainstem. From this it follows that a whole-brain-dead patient is legally dead according to the traditional criterion for determining death. Alternatively, the principle that it is permissible to remove an impediment to the soul's departure implies that the patient is still alive until the respirator is turned off.

Table 1 Court decisions determining criteria of death

UK	*R.* v. *Potter*, Times, 26 July 1963
	R. v. *Malcherek*, *R.* v. *Steel*, [1981] 2 All ER 422, [1981] WLR 690 (CA)
	Re A [1992] 3 Med LR 303 (Fam D)
Israel	*Shefer* v. *State of Israel* [1994] IsrSC 48(1) 87, [1992–1994] Isr LR 170
USA	In re T.A.C.P., 609 So. 2d 588 (Fla. 1992)

Because Jewish law, at least to some degree, views removal of artificial respiration from a brain-dead patient as an acceptable form of euthanasia, Israeli courts have been preoccupied with the question of whether this exception might be widened. In a recent case, the District Court of Tel Aviv granted the requests of two patients suffering from amyotrophic lateral sclerosis that they not be given any life-sustaining treatment when they slipped into a persistent vegetative state. The sanctity of life principle would forbid this in Roman Catholic and Islamic law on the grounds that a patient suffering persistent vegetative state is not yet dead.

Taxonomy of Definitions

It is typical of transplantation statutes and regulations to include definitions of the criteria according to which responsible healthcare professionals are to determine that a patient has died. Such statutes and regulations tend to fall into one of two categories. In the first category are many that provide definitions of whole-brain death only. For example, the statutes or regulations of Argentina, Colombia, Hungary, Norway, Peru, Russia, Spain, and Sri Lanka fall into this category, as does the Canadian model act. The Norwegian regulation is the clearest in this regard, explicitly defining whole-brain death as the exclusive definition of death, and indicating that verification of the traditional criterion (i.e., cardiopulmonary failure) constitutes proof of whole-brain death as well. Other statutes and regulations in this category are less

clear, often implying that whole-brain death is an alternative to the traditional criterion. For example, the Canadian model statute states that death "includes brain death." In the second category are statutes and regulations that expressly define death as either the permanent cessation of cardiopulmonary functions or whole-brain death. The statutes and applicable regulations of Australia, France, Germany, Greece, Italy, Mexico, Panama, and the Philippines, among others, fall into this category. The Bulgarian statute employs a single definition that can be interpreted as either whole-brain or cardiopulmonary death, referring to "clearly established irreversible biological death." In contrast, the Ecuadorean statute seemingly requires attending doctors to determine both whole-brain and cardiopulmonary death.

As of 1994, the number of countries with statutes or regulations incorporating brain death either as the sole or alternative legal definition of the criterion of death stood at 28, according to one source, and that number has surely risen since (Table 2). It should be noted that, in some countries, such as Australia, Canada, and the USA, competence to legislate in this area falls within the jurisdiction of states and provinces, rather than the federal government; therefore there are many statutes in these countries, rather than a single statute. Finally, it should also be noted that only a few of the statutes defining the criteria of death also state that those criteria are mandatory. For example, the Hungarian statute states that the fact of death "must be considered as established" in the event that the attending doctor determines that the patient has suffered destruction of the entire brain. Where statutes do not make the enumerated criteria mandatory, it is entirely a question of interpretation whether the attending doctor must follow them.

Another group of statutes and regulations establish a standard indirectly, by referring to scientific consensus for the definition of death. For example, the Turkish statute requires that death be determined "in accordance with contemporary medical knowledge and procedures." The Belgian, Bolivian, and Tunisian statutes, among others, also fall into this category. Statutes of this type may be regarded as incorporating the whole-brain death standard by reference, since virtually all national, medical standard-setting bodies have adopted it. In addition, the World Medical Association adopted the whole-brain death standard in its 1968 Declaration on Death.

At the other extreme are statutes and regulations that provide no definition of death. For example, the UK Human Tissues Act (1961) states only that organs may be removed by a doctor after he has "satisfied himself by personal examination of the body that life is extinct." In lieu of providing a definition, some statutes specify fairly elaborate procedures that must be followed in determining death. Oftentimes the determination must be made by a commission of three doctors, occasionally required to include a neurologist or other particular specialist.

In the UK and other similar nations, the definition of the criteria to be used in determining death for the purpose of authorizing organ donation must be derived from some other source. English common law has supplied the definition of death from cases, though not from cases interpreting the Human Tissues Act. In an initial false step, a doctor charged with manslaughter was convicted of simple assault for

Table 2 Statutes and regulations determining criteria of death

Argentina	Law no. 21541, s.21 (1977)
Belgium	Law on the removal and transplantation of organs, s.11 (1986)
Bolivia	Regulations on the use of organs and tissues, s.7 (1982)
Bulgaria	Ordinance no. 15, Ministry of Public Health, s.4 (1976)
Canada	Uniform Human Tissue Donation Act (1990)
Colombia	Decree no. 1172, s.9 (1989)
Ecuador	Law no. 64, s.2 (1987)
France	Decree no. 96-1041 (1996), codified in Code of Public Health, ss.671-7-1 to 671-7-4
Germany	Law on Transplantation, ss.3,5 (1997)
Greece	Law no. 1383 (1983)
Hungary	Ordinance no. 18, annex 2 (1972)
Israel	Basic Law: Human Dignity and Liberty (1992–4); Penal Code, ss.299,309,322 (1977)
Italy	Law no. 644, s.4 (1975)
Japan	Law no. 104 (1997)
Kuwait	Ministerial order no. 253 (1989)
Mexico	General Law on Health, s.317 (1983)
Norway	Regulation on the definition of death in connection with the law on transplantation, s.1 (1977)
Panama	Law no. 10, ss.7,8 (1983)
Peru	Law no. 23415, s.5 (1982); Civil Code, article 61
Philippines	Organ Donation Act, s.J (1991)
Russian Federation	Law on the transplantation of human organs and/or tissues, s.9 (1992)
Saudi Arabia	Senior Ulama Commission Decision no. 99 (1982)
Singapore	Act no. 22, Interpretation Act s.2A (1998)
Spain	Law no. 30, s.5(1) (1979)
Sri Lanka	Transplantation of Human Tissues Act, no. 48, s.15 (1987)
Sweden	Law no. 269, concerning criterion for determination of human death (1987); National Social Welfare Board Regulations concerning Medical Care, no. 269 (1987)
Tunisia	Law no. 91-22, s.15 (1991)
Turkey	Law no. 2238, s.11 (1979)
UK	Human Tissue Act, ss.4,4A (1961)
USA	Uniform Determination of Death Act, 12A Uniform Laws Annotated 593 (1996 and 2003 Supp.)

turning off a respirator after removing a kidney from a whole-brain-dead patient. In two later, consolidated cases not involving transplantation, the Appeals Court upheld lower court rulings that there was no evidence to suggest that patients were still alive when their respirators were removed, since the record showed that doctors had followed "normal and conventional" procedures to establish whole-brain death. The Appeals Court side-stepped the lower courts' conclusion as to the time of death. However, the Appeals Court did overrule Potter by holding that shutting off the respirator did not break the chain of causation leading from original assaults to ultimate death (*R.* v. *Malcherek*, *R.* v. *Steel*, 1981). Finally, in Re A (1992) (Table 1) the court unambiguously held that death of the brainstem constitutes legal death, and in *Airedale NHS Trust* v. *Bland* (1993) decreed that "a person is not clinically dead so long as the brainstem retains its function."

Consideration of the various approaches taken by transplantation statutes to the definition of death raises several important questions. First, in deferring to current medical knowledge for the definition of death, how far should statutes go in codifying that knowledge? The definition of death itself, which underlies any acceptable definitions of the criteria for determining when death has occurred, is a philosophical and religious, rather than medical matter. Therefore, statutes do well to state explicitly which standard applies, whether it be whole-brain death, cardiopulmonary death, or both, without reference to medical opinion. Alternatively, statutes and accompanying regulations that go further, setting out in detail precisely which clinical tests are to be carried out, and in what manner, in order to determine that death has occurred, perhaps stray too far into clinical detail and risk freezing the law at one point in technological and scientific development. Better to incorporate the best current medical practice by reference, leaving it to the appropriate medical bodies to define precisely what those practices are. This is particularly so since what constitutes best practice is subject to continuous development.

Another significant question involves the applicability of the definition contained in transplantation or general definition statutes to the many contexts in which the definition of death is of legal consequence. Such contexts include matters related to contracts, ownership of property, testamentary bequests, inheritance, debts, trusteeships, maintenance, and termination of marriage, among others. In order to establish a uniform standard, some nations have incorporated the brain-death standard in general all-purpose statutes. Among these nations are Peru, Singapore, and Sweden. However, it is quite likely that different definitions of the criteria of death will appeal to reason in different contexts. Definitions of the criteria of death contained in transplantation statutes ought to be strictly construed to apply only to cases arising under those statutes. In common-law systems, flexible and adaptive case law ought to be encouraged to develop a variety of context-specific definitions of the criteria of death as needed. In legal systems that do contain a single, statutory definition of the criteria of death, it may be necessary to develop evidentiary presumptions applicable to specific situations, for example, a presumption of death in the case of a spouse who has been missing for a specified period of years.

Different to the question of whether legal systems ought to have a unitary definition across the entire spectrum of possible contexts is whether transplantation statutes ought themselves to have a unitary definition of death. The Japanese Law Concerning Organ Transplantation (1997) is interesting because it requires the donor to express previous consent both to the legal diagnosis of death by reason of whole-brain death and to removal of specified organs. In the absence of express prior consent, death will only be diagnosed according to the traditional, cardiopulmonary criteria. The statute thus permits the donor to choose which of two legal definitions of death he/she wishes to apply to him/herself. Within the limits imposed by the statute, this approach provides a very sensible form of religious accommodation.

The Definition of Death in the USA

At present, the American approach comes fairly close to adopting context-specific definitions of death. Many states have adopted general definitions that purport to apply in all contexts. The Commissioners on Uniform State Laws have adopted a model death definition statute that has been adopted by 32 states, the District of Columbia, and the Virgin Islands. It defines an individual as dead when that person has sustained irreversible cessation of either circulatory and respiratory functions or "all functions of the entire brain, including the brainstem."

However, the American situation is less monolithic than this general approach seems to suggest. First, the Uniform Act itself provides different criteria for determining whether a person is dead without specifying the circumstances in which one or the other criterion is to be used. Thus, for example, one is left to wonder whether a person who has sustained irreversible cessation of "unassisted" circulatory and respiratory function is dead. More importantly, many issues that seem to revolve around the question of whether a person is dead are not resolved by the

statutes. Thus, for example, if a person has been missing for a long time, presumptive death statutes treat the person as dead for purposes of distributing his/her estate or allowing a spouse to remarry, without regard to the missing person's circulatory, respiratory, or brain function. Also, in Florida the State Supreme Court held that an anencephalic infant was not dead for the purposes of permitting her organs to be removed for transplantation (Table 1). This leaves open the question of whether such an infant might be treated as dead for other purposes. For example, would an anencephalic infant be viewed as dead if the question were whether she had to be treated at an emergency room or resuscitated? Such questions cannot be resolved by definition.

Whole-Brain Death versus Persistent Vegetative State

Virtually all legal definitions of brain death distinguish between whole-brain death, involving destruction of the brainstem as well as the cerebellum and cerebrum, and higher brain death only. Patients who suffer the latter, or persistent vegetative state, are not regarded as dead. On what basis is this distinction made? If a patient were unable to breathe without a respirator, but nevertheless retained consciousness, no definition would regard that person as dead. Thus, it is the concept of death as the permanent annihilation of all human consciousness, rather than the fact that the patient is no longer able to breathe without assistance, that underlies brain death as the criterion of legal death. Yet the patient who suffers from persistent vegetative state suffers such annihilation as well. The rationale underlying the distinction in the world's legal systems must be that continued respiration and circulation, unaided by mechanical means, forecloses the conclusion that loss of all consciousness is irreversible and therefore permanent. The distinction is also supported by a dualist conception of life, according to which autonomous respiration involves too much physical activity, and too much integration between physical and mental activity, to constitute the state of death.

See Also

Coma, Definitions and Differential Diagnoses: Pediatric; Adult; **Organ and Tissue Transplantation, Ethical and Practical Issues**; **Religious Attitudes to Death**

Further Reading

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