For centuries, philosophers, students of ethics, religious leaders and lawyers have been debating issues concerning life and death and, in particular, the question of the moment of death. The relevance of defining the moment of death will be apparent from the next few paragraphs. At the present stage, it is sufficient to point out that as a result of certain actual legal controversies, this question is no longer of mere theoretical interest and has assumed considerable practical importance.

**Legal significance**

To illustrate the practical importance of determining the moment of death, it may be useful to cite a few situations wherein legal significance would come to be attached to the moment of death. Thus, for example, the law has a well-established doctrine that a Will speaks from the moment of death and not earlier, nor later. If a person is regarded as dead in the eye of the law, then, from that moment, it is the executor appointed under the Will who takes charge of his assets and who can exercise certain powers in regard to those assets. Again, if two or more persons have died and one has made a Will in favour of the other, then it becomes necessary to determine who died first. If the beneficiary under the Will is, on the facts, held to have died first, then obviously he or she cannot take under the Will.

**The ethical perspective**

Apart from the legal significance of the moment of death, there are associated with death certain very important ethical issues and, in particular, doctors are particularly worried about precisely defining the moment of death. As will be elaborated later, the ethical soundness of a number of medical procedures and surgical interventions in many cases depends on determining the question whether the patient is to be regarded as dead or alive. For example, if a patient, seriously injured in an accident and kept under observation in a unit providing intensive cardiac care, has completely lost his mental faculties, then, is it permissible for the doctor to stop the cardiac care? The dilemma of the doctor in such situations is well known. If he stops giving such care on the basis that the patient is "dead" and ultimately the opposite view is taken by others who hold that there is still life in the patient, then the doctor may be guilty of taking away "life". The doctor's problem has, at this stage, been deliberately expressed in simplified terms; if one goes into technical details, one would find that there are a number of more complex issues arising in such a situation.

**The social aspect**
Much more important is the social aspect. If a person clinically dead is still regarded as alive, near relatives of that person would definitely express themselves against treating his body as dead body. Such an action would be shocking, disgusting and outrageous for them and would hurt their deepest sensibility. In fact, legal discussions and views about the correct medical procedure are really connected with the social aspect. The law tries to formulate its norms in a particular direction, only because, rightly or wrongly, the law-makers take the view that a particular approach would be in harmony with the wishes, feelings and interests of society. Similarly, when the medical profession adopts a particular stand it does not forget the social aspect. The business of the medical profession is to prevent and cure disease, to promote healing, to remove or reduce the impact of disabilities and deformities and to help mankind to live a healthy life. It performs this function with the help of the scientific expertise at its command. But such expertise is only its own means of enabling the members of the profession to advance the interests of society. One can therefore say that individual and social well being is the principal planetary body, around which the various professions revolve as satellites.

**Possible alternatives**

At this stage, the lay person may legitimately ask the question as to the need for defining the moment of death. To the ordinary person, that simply means the termination of life and it is generally assumed that such termination takes place when the heart stops beating. But if one goes into developments in this field, one would find that over the years, certain other alternative criteria have been thought out. The traditional concept of death which is associated with the stopping of the heart, gives a place of prominence to the heart. This is understandable, because we associate life with the process of breathing. In medical terms, this is described as cardio-vascular death. But, as a competitor with this theory, there is now in the field another parallel criterion of death, which emphasises the cerebral aspect and holds that death occurs when the brain-stem stops to function. The proponents of this view do not deny the reality of death as occurring when the heart stops. But the total cessation of the functioning of the brain-stem is presented as an alternative test of death.

**Transplantation of organs**

The proposal to recognise brain-stem death as a criterion, though it is not confined to the topic of transplantation of organs, has received prominence in the context of transplantation. Organs of the body (with the exception of kidney etc.) cannot be transplanted from the body of a live person. Death must have occurred, if transplantation is to be carried out. This is how the practical importance of defining the moment of death arises-though the importance of defining the moment of death is not confined to the act of transplantation. In many countries (including India), irreversible cessation of the functioning of the brain-stem has, by law, been declared to be the moment when death can be treated as having taken place, while retaining the alternative test of cardiac
death. In other words, if (after following the statutory procedure) a person is declared dead by the competent medical personnel on the basis of the above test, then transplantation of an organ from that person's body is regarded as transplantation from a dead body. Of course, the statutory provisions regarding consent or the wishes of the deceased person etc. have to be complied with, in every case.

**The views of society**

The ethical question that arises now from the point of view of society is, whether, such expansion of the concept of the moment of death is acceptable to society. In a sense, the passing of legislation can be said to be the result of the view of certain sections of the society. But it is still desirable that the significance and implications of the law are brought home to society as a whole.

**Artificial prolongation of life**

The question of defining the moment of death becomes relevant in the medical and social context in another situation also. Where a patient comes to be in a serious state of coma which is expected to be permanent and incurable, how long should the doctor support his life by resorting to artificial means of prolonging life? If there is no hope of the brain returning to its normal functions, should life still be prolonged indefinitely? This question immediately faces the medical profession, but (like many other medical issues), ultimately it also touches and concerns society as a whole. The medical procedure adopted in such cases may vary but, in essence, it amounts to prolonging life, where the patient’s mental faculties may never return.

**The living Will**

In some countries, the problem mentioned in the preceding paragraph has been dealt with by specific legislation. Literature on the subject is extensive, but it is enough to cite, from Black's Law Dictionary (1990), page 1599, the following description of the concept of 'living Will'', adopted in some states in the United States.

"**Living Will.** A document which governs the withholding or withdrawal of life-sustaining treatment from an individual in the event of an incurable or irreversible condition that will cause death within a relatively short time, and when such person is no longer able to make decisions regarding his or her medical treatment. Living Wills are permitted by statute in most States. Cruzan v. Missouri, 110 S. Ct. - (1990)."

English law In England, so far, there is no statutory definition of the event of death. However, the matter is dealt with by professional standards which seem to have proved fairly satisfactory in practice. In the U.K., it was in 1976 that the Medical Royal Colleges and their Faculties issued a statement, detailing the criteria that needed to be observed for the determination of brain death. These were restricted to the irreversible loss of function of the entire brainstem, certain precautions were to be fulfilled and certain conditions excluded. Three years later, in 1979, these same Medical Royal Colleges and
their Faculties stated that the death of the brainstem indicated the death of the human individual. The decisions of the Medical Royal Colleges were authoritative and approved by the Department of Health of the Government in that country. Their recommendations were largely accepted by the medical community and widely implemented, both in the U.K. and elsewhere. See Conference of the Medical Royal Colleges and their Faculties in the U.K.: Diagnosis of Brain Death, (1976)2 Br. Med. J. 1187: Conference of the Medical Royal Colleges and their Faculties in the U.K.: Memorandum on the Diagnosis of Death, (1979)1 Br. Med. J. 322.

There is a good deal of English case law directly or indirectly dealing with the causation of death and the moment of death. It is reported that the test of "brain stem death" was indirectly approved four years ago in an English case. In January, 1992, a High Court judge in the U.K. ruled that it would not be unlawful to disconnect a baby diagnosed to be "brainstem dead" from a respirator. The delayed disconnection of a dead baby from a respirator by doctors was because of a prohibitory order made under the Children's Act, 1989 by the Family Proceedings Court, in response to an application for an emergency "protection order" stemming from the parent's anticipation of civil and/or criminal proceedings arising from their child's death. Brahams, D: Delayed Disconnection of Dead Baby from Ventilator, (1992)340 Lancet 1154.

It needs to be mentioned that while fairly elaborate legislation has been enacted in England on several medico-legal matters, including the donation of organs, artificial insemination and surrogate parentage, that country has scrupulously avoided giving a definition of death.

**Developments in United States**

In the United States, the developments have been intensive as well as extensive. They have been intensive, in the sense that there is prolific literature on the subject, as well as a good deal of case law. Similarly, Universities, research institutes, the legal profession, the medical profession and the Government, have all participated in the movement towards evolving a definition of death. A concrete shape to these developments was given by the Harvard University, - whose Medical School appointed an ad hoc committee which gave a report. (Adhoc Committee of the Harvard Medical School: A Definition of Irreversible Coma, (1968)205 J. Am. Med. Assoc. 337.) Broadly speaking, the report of the Harvard Committee approves of the concept of brainstem death. It laid down certain criteria for a declaration of death. The committee was presided over by Dr. Henry K. Beecher and the report is dated 5th August, 1968. The gist of the conclusion is that a patient with a permanently non-functioning brain would appear to be in deep coma. According to the suggestion in the report, the following observations were to be made: (1) a total unawareness of externally applied stimuli and inner need as well as complete unresponsiveness to any form of stimuli; (2) (a) a total absence of spontaneous muscular movement,
during observation over a period of at least one hour; and the absence of any response to pain, touch, sound or light stimuli; (b) the absence of spontaneous respiration (apnoea) during observation for at least one hour; and, if the patient was attached to a respirator, the absence of spontaneous breathing over a period of three minutes after disconnection of the patient from the respirator under specified conditions; (3) the absence of elicitable reflexes such as the papillary, the oculovestibular (caloric), blink, corneal, gag and pharyngeal as well as the absence of postural activity (decerebrate or other), yawning or vocalisation. These clinical findings, in the initial opinion of the group, could be corroborated by the presence of a flat or isoelectric EEG but, this requirement was abandoned a year later. The Ad hoc Group, being aware that EEG equipment and expertise was not always available in some situations, advised that the absence of brain function could be determined clinically, using the tests that they had listed, or by the absence of circulation as judged by a 'standstill of blood in the retinal vessels, or by absence of cardiac activity', provided hypothermia and the effect of depressant drugs on the central nervous system were eliminated. The Group advised that all the tests performed on the deeply comatose individual suspected to have an irreversible coma should be repeated after 24 hours, and if no changes were observed, it was indicated that the person be declared dead. The respirator could then be disconnected and the patient's relatives informed of the end.

President's Commission

Skipping over many other developments in the United States, one should now refer to an important event of 1981. In July, 1981 the President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioural Research submitted a report' entitled "Defining Death" to the President, the Congress and Government of the U.S.A. This Commission proposed model legislation relating to the determination of death which read as follows.

"An individual who has sustained either -
1. Irreversible cessation of circulatory and respiratory functions, or
2. Irreversible cessation of all functions of the entire brain, including the brainstem, is dead.
A determination of death must be made in accordance with accepted medical standards'.


International developments

There have been some international developments also. By 1992, several countries of the world seem to have adopted the test of brain death and this includes 46 countries of Europe, America, Asia and the Middle East. So far as
the World Health Organisation is concerned, it has also advised that the criteria of brain death be adopted and this also seems to be the general approach of the Council of Europe. Council of Europe: On Harmonisation of Legislations of Member States Pertaining to Removal, Grafting and Transplantation of Human Substances, Resolution (No.29) of Committee of Ministers, 287th Session, May 11 (1978); Council of Europe: Third Conference of European Health Ministers on Organ Transplantation, Paris, 16-17 November (1987).

Space does not permit mention of the numerous developments in individual countries of Europe, Asia etc. It must be mentioned that in the United States, in 1980, a Uniform Determination of Death Act was proposed for adoption in the various jurisdictions of that country. Its principal recommendation was as follows:-

"An individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) Irreversible cessation of all functions of the entire brain, including the brain stem, is dead, and determination of death must be made in accordance with accepted medical standards."

The question of transplantation

At this stage, one should note one aspect of the subject of definition of death. This relates to the linking of this definition with relating to the transplantation of organs. This problem is of particular importance in the Indian context because, in India, it is the legislation on transplantation of organs which contains the definition of death. The problem may be thus stated. If the position regarding the criterion for death in a context other than transplantation is left undefined by statute then what is the principle governing the definition of moment of death in other cases? The law would still remain undefined for other situations. Apart from that, a peculiar anomaly may arise, as has been demonstrated by Dr. Pallis, an eminent British neurologist: "Imagine patient A (on the verge of death from a progressive and intractable cardiac cause). In the ITU across the corridor, also imagine patient B (With irreversible destruction of the brain stem, secondary to a massive subarachnoid haemorrhage), because artificial ventilation is still being maintained, patient B still has a beating heart transplant surgeon removes A's grossly diseased heart (which he consigns to the local pathology museum) and replaces it with B's young and still vigorously beating heart. What is the ontological status of the two individuals? If the criterion of one's death is the cessation of one's cardiac activity, then patient A (happily walking out of hospital a month after his operation) is dead, whereas patient B (the totality of whose mortal remains-except his heart-have been Interred in the local graveyard) is very much alive." Pallis, C.: “Return to Elsinore” (1990) 16 J. Med. Ethics. 10.