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## NEOMORT

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A term coined by Willard Gaylin in a 1974 *Harper's Magazine* article, neomort refers to an individual human who has suffered brain death but whose other biological capacities have been maintained on a respirator, possibly with cardiac assist. This entry explores the issues surrounding the potential use of neomorts as organ donors and for other purposes.

The traditional criterion of death had been irreversible cardiac arrest. So defined, death was compatible with the transplantation of certain organs, including kidneys and corneas. But the growing practice of cardiac transplantation rendered the traditional criterion no longer useful. In the past, cardiac transplantation involved the removal of the still-beating heart from one individual and the implantation of it into the body of another individual suffering from heart failure. If irreversible cardiac arrest were to remain the definition of death, cardiac transplantation would forever be an act of killing the donor. The plight of individuals suffering from failing hearts who could have their normal lives restored through cardiac transplantation prompted the redefinition of death in the 1960s.

Redefinition was necessary, for heart transplants must be made with the living heart, unlike other organs. This meant removing the beating heart from the donor and transplanting it into the receiving patient. Doing so, under the cardiac criterion of death, entailed killing the donor even if no brain function was present.

Legislation was developed to redefine death. In a remarkable show of unification, all 50 states passed the same legislation in short order. The model that "brain death" proponents advocated, now adopted in all 50 states, is the Uniform Determination of Death Act (UDDA) of 1986, Section 1, chapter 23-06-01. Effective as of July 1, 1987, this act reads 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. A determination of death must be made in accordance with accepted medical standards.

That widespread acceptance, however, did not signal an absence of criticism. First, based on various apocryphal accounts of individuals who, having been declared dead, revive, many have doubted that diagnosis of brain death that leads to cardiac transplantation is an unerring procedure. One critic likened it to execution of individuals later found, through DNA analysis, to be innocent of the crimes for which they were convicted.

Second, there was suspicion of the motives of those who advocated the brain death criterion over a previous "dead donor rule," the permanent cessation of the functions of the prospective donor's heart. Despite a wide public support for increasing organ supplies, critics argued that elevating this laudable goal over the satisfaction of the then current criterion of death was an act that elevated pragmatic utility over our commitment to fight to preserve one another.

Third, the clamor for access to transplantable organs of patients suddenly confronted with the consequences of personal irresponsibility plus the indifference to prevention of a public health policy oriented toward cure rather than prevention, together with the financial rewards to transplant hospitals of such surgeries, places the dying in the service of the salvageable.

Against all these objections, the new definition of death was legally and widely accepted. Nonetheless, a host of other troubling issues stood in the wings awaiting their consideration.

First, a choice needed to be made between requiring prior explicit consent of the prospective donor to the harvesting of organs, and presuming the donor's consent absent an indication by the donor to the contrary. Numerous other countries have a policy of routine retrieval of transplantable organs from cadavers and neomorts, grounded on a supposed inherent obligation of the individual to the society. The United States could follow this philosophical orientation to maximize the supply of transplantable organs, or it could require explicit consent from the competent donor, expressed through a public verbal wish, a signed and current donor card, or a conversation with a loved one or health care professional, in prospect of a looming demise.

While routine retrieval was rejected in the United States in place of prior consent, the threat of possible litigation prevents its complete effectiveness. Even with a signed and witnessed donor card, transplant units in hospitals are unwilling to

honor donors' expressed wishes in the face of the disagreement of any next of kin.

One suggestion is to permit procuring organs during the terminally ill patient's dying phase after informed consent has been obtained. Such autonomy-based end of life donations raise the issue of coercion in the process of obtaining and acting on consent to donation, but the issues there are not substantially different than those successfully dealt with in Oregon's procedures that permit terminally ill patients to obtain a physician's assistance in hastening death.

Gaylin's *Harper's Magazine* article suggested other possibilities offered by neomorts that highlight the need for extensive public discourse. In his novel *Coma*, physician-author Robin Cook envisioned neomortuaries, in which neomorts would be maintained on life support and used for various medical and scientific purposes. Gaylin suggests other possible uses for neomorts: training of medical students ranging from routine medical exams to practicing surgical techniques; testing of drugs and surgical procedures to decrease the likelihood of species-specific incompatibilities that might steer us away from promising therapies or toward therapies with negative effects that were not predictable based on animal experimentation and the reporting of cellular data alone; banking of organs and tissues, thoroughly typed and cataloged, to be held available for the transplantation needs of future patients; continual harvesting of renewable and multiply present tissues throughout the body; and manufacturing of hormones, antitoxins, and antibodies.

The prospect of viewing each of us as standing to the other as potential source of life extension is disturbing. Yet, for some, the prospect of a kind of life extension in service of others after our death is attractive.

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*See also* Brain Death; Defining and Conceptualizing Death; Informed Consent; Organ and Tissue Donation and Transplantation; Persistent Vegetative State; Terminal Illness and Imminent Death

#### Further Readings

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## NEONATAL DEATHS

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A neonatal death is death of an infant prior to the 28th day of life. Demographers and epidemiologists define the neonatal mortality rate (NMR) as:

$$NMR = \left( \frac{Deaths_{<28days}^z}{Births^z} \right) * 1,000,$$

where

$Deaths_{<28days}^z$  refers to deaths to infants younger than 28 days old, in year  $z$ ; and

$Births^z$  is the number of live births in year  $z$ .

Neonatal deaths are usually examined separately from other infant deaths occurring during the first year of life. This distinction is made because (a) there is very high mortality during the first minutes, hours, days, and weeks of life, and (b) the causes of death in the neonatal period tend to differ from the causes in the postneonatal period (28 days to 364 days after birth).

#### Primary Causes of Neonatal Mortality

In 2005, about 30% of all neonatal deaths occurring in the United States were due to prematurity, or being born before 37 weeks of gestation. Generally, the more premature the infant, the more likely death will occur. Only about 20% to 35% of babies born at 23 weeks of pregnancy survive, compared to 50% to 70% of those born at 24 to 25 weeks. Survival increases to more than 90% at 26 to 27 weeks' gestation, whereas births before 32 weeks' gestation, comprising about 2% of all births, account for most neonatal deaths and disorders.

Premature births occur after spontaneous premature labor (50% of cases), a spontaneous rupture of the membranes (30% of cases), and intentional