

to accept this active role in the dying process has probably enhanced, rather than eroded, the public trust in the profession.

Our society generally supports the view that people should be granted the broadest range of freedoms compatible with assurance of the same for others. Some people may have personal moral views that preclude the approach we describe here, and these views should be respected. Nevertheless, the views of people who may freely avoid these options provide no basis for denying such liberties to those who wish to pursue them. When death is very near, some patients may want to die in the process of helping

others to live, even if that means altering the timing or manner of their death. We believe that policymakers should take these citizens' requests seriously and begin to engage in a discussion about abandoning the DDR.

The views expressed are those of the authors and do not necessarily reflect the policy of the National Institutes of Health, the Public Health Service, or the Department of Health and Human Services.

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## Life or Death for the Dead-Donor Rule?

James L. Bernat, M.D.

The increasing disproportion between the supply of donor organs and the demand for transplants as well as the tragic deaths of patients awaiting organs have encouraged the development of creative solutions to increase the donor supply. In the domain of donation from deceased donors, the protocols for organ donation after the circulatory determination of death (DCDD) have been one such response. Most U.S. organ-procurement organizations have seen organs from DCDD protocols account for a growing percentage of all organs donated from deceased donors (see graph). In England, DCDD organs currently constitute a greater percentage than organs donated after the determination of death by brain criteria ("donation after the brain determination of death," or DBDD).

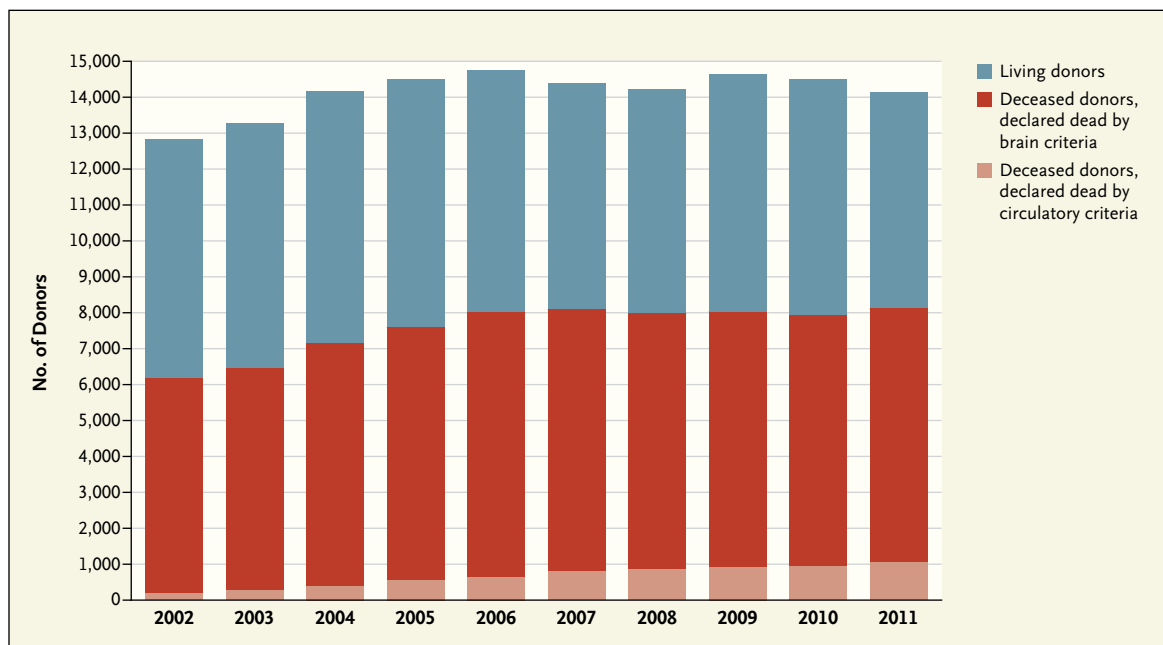
Another innovative strategy is the kidney-donation protocol re-

cently proposed by Paul Morrissey of Brown University.<sup>1</sup> This protocol permits a lawful surrogate decision maker for a patient with a severe, irreversible brain injury (but who is not "brain dead") to authorize withdrawal of life-sustaining treatment and pre-mortem donation of both kidneys. Whereas DCDD protocols entail removal of organs after the cessation of life-sustaining therapy and the subsequent declaration of death, the Morrissey protocol provides for procuring organs while the patient remains alive. Life-sustaining treatment is withdrawn after the donation has been accomplished. The patient dies of the respiratory complications of the original brain injury, which is fatal in the absence of life-sustaining treatment.

Some commentators have claimed that Morrissey's protocol violates the dead-donor rule (DDR). The DDR is not a law but

an informal, succinct standard highlighting the relationship between the two most relevant laws governing organ donation from deceased donors: the Uniform Anatomical Gift Act and state homicide law. The DDR states that organ donation must not kill the donor; thus, the donor must first be declared dead. It applies only to organ donation from deceased donors, not to living donation, such as that of one kidney or a partial liver. Morrissey's protocol does not violate the DDR because it is a type of living organ donation that does not kill the donor. The donor dies not as a result of the azotemic consequences of the donation of both kidneys but earlier, of respiratory arrest.

That the act of organ donation must not kill the donor has been regarded as the ethical and legal foundation of organ donation from its earliest days. John Rob-



**Organ Donation in the United States by Donor Status, 2002–2011.**

Data are from the Scientific Registry of Transplant Recipients.

ertson, the scholar most closely associated with the DDR, has provided its ethical and legal footing. Robertson explains that the DDR is a deontological rather than a utilitarian rule because it forbids causing a person's death by removing organs for needy recipients, even with the potential donor's consent. Arguing that the DDR protects vulnerable people, such as anencephalic infants and incarcerated prisoners (whose use as organ donors had previously been proposed and rejected), he considers the rule "a centerpiece of the social order's commitment to respect for persons and human life." And he emphasizes that the DDR helps to maintain public trust in the organ-procurement system, calling it "the ethical linchpin of a voluntary system of organ donation."<sup>22</sup>

Over the past decade, several scholars have called for the abandonment of the DDR, claiming that it is routinely violated in

medical practice and that it impedes increased organ donation (see Perspective article by Truog et al., pages 1287–1289).<sup>3</sup> Such scholars have proposed replacing the DDR with the voluntary consent of the dying patient who is beyond harm to donate organs before death. These conditions, they argue, represent sufficient grounds for surgeons to remove organs, even if doing so causes the donor's death.<sup>3</sup> I believe that, although there are informed patients for whom this practice would work, violating the DDR is misguided and will lead fearful patients to lose trust in physicians and confidence in the organ-donation system and will result in an overall decline in organ donation.

One barrier to implementing DCDD protocols is the concern, expressed in surveys of the public and of health care professionals, that the donor is not actually dead at the moment death is usu-

ally declared.<sup>4</sup> The standards for the circulatory determination of death remain a matter of debate, though reasoned standards are emerging.<sup>5</sup> In particular, discussions are ongoing about the minimum required duration of asystole before death can be declared and whether cessation of circulation must be irreversible (cannot be reversed), as stipulated in many death statutes, or merely permanent (will not be reversed), as is traditionally accepted by physicians.<sup>5</sup> The Institute of Medicine and the U.S. Department of Health and Human Services strongly support DCDD and recommend its more widespread implementation in hospitals — a process that is well under way.

Some critics of the brain or circulatory determination of death reject the prevailing choice for the moment of death — that point separating the process of dying in a living patient from the process of bodily disintegration

in a dead person. In non-donation circumstances, the precise moment separating alive from dead is usually inconsequential, because physicians declaring death have the luxury of time. In the circumstances of donation, timing is critical to minimize warm ischemic exposure of the organs being transplanted. Thus, a reasoned judgment must be made about the moment of death that is conceptually coherent, physiologically plausible, and socially acceptable.

Physicians should apply the circulatory criterion for death similarly whether or not organs are intended to be donated. When a dying patient with a do-not-resuscitate (DNR) order is not an organ donor, death is usually declared at the moment of asystole, a time when it still might be possible to resuscitate the patient if cardiopulmonary resuscitation (CPR) were attempted. Thus, physicians require only the permanent cessation of circulation in order to declare death. In DCDD donors, too, death is declared when circulation has permanently ceased. Permanence is established by two conditions: that sufficient time has elapsed after the occurrence of asystole to assure that circulation will not restart spontaneously (autoresuscitation) and that CPR will not be administered.<sup>5</sup>

Although public-survey data consistently reveal confusion over

the concepts of death and criteria for determining it in both DBDD and DCDD, reviews of professional and public opinion from several studies reveal strong support for the DDR.<sup>4</sup> Indeed, the DDR is so clearly regarded as an axiom that survey questions assume its essential role and inquire whether the protocols for DCDD or DBDD violate it.<sup>4</sup>

I believe that the DDR is an indispensable ethical protection for dying patients who plan to donate organs and one that strengthens public trust and confidence in our voluntary system of organ donation. Public support for organ donation is broad but shallow. It remains precarious and can be shaken dramatically by highly publicized donation scares such as those following a BBC *Panorama* exposé in 1980, CBS's 1997 report on *60 Minutes* about the Cleveland Clinic's consideration of a DCDD protocol, and the story of the California transplant surgeon who allegedly wrote terminal care orders for an organ donor in 2006. Many people harbor a fear that physicians have a greater interest in procuring their organs than in their welfare. They need the reassurance provided by the DDR. In 2006, the Institute of Medicine supported the DDR as a protective standard necessary to instill public confidence.

I favor strategies to increase the organ supply such as improv-

ing donation consent rates by enhancing family education and communication, optimizing end-of-life care for donors while supporting grieving families, and developing state donor registries to authorize first-person donor consent. Recognizing that the harms of abandoning the DDR exceeded the benefits, John Robertson proposed a two-part prudential test for assessing proposed changes to the rule, asking what effect they would have on the protection of vulnerable persons and on preserving the public trust.<sup>2</sup> These essential questions need to be answered conclusively before our society considers abandoning the DDR.

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## What Would You Do if It Were Your Kid?

David N. Korones, M.D.

I know we're not supposed to have favorites, but Lizzy was one of mine. She was 8 years old. Her eyes still sparkled, even

though her curly brown hair had long since fallen out because of radiation and chemotherapy for a malignant brain tumor. When the

tumor recurred, her parents and I knew she would ultimately die of her disease. But she felt fine, and it was impossible not to give