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The Truth about "Donation after Cardiac Death"

Robert D. Truog and Thomas I. Cochrane

Robert D. Truog, MD, is a Professor of Medical Ethics and a Professor of Anaesthesia (Pediatrics) in the Department of Social Medicine, Harvard Medical School, and in the Department of Anesthesia, Children's Hospital Boston, *robert_truog@hms.harvard.edu.*
Thomas I. Cochrane, MD, MBA, is an Instructor in the Department of Neurology at Brigham and Women's Hospital and Harvard Medical School in Boston.

Donation after cardiac death, or DCD, is enjoying a resurgence as a pathway to organ procurement, to obtain more organs for transplantation. DCD has many controversial features, but James Bernat chooses to focus on what he regards as the most serious claim, that the DCD donor "is dying but is not yet dead after only five minutes of asystole." Bernat's logic is clear and compelling. We will reconstruct certain elements of his arguments here. First, he affirms that the concept of irreversibility is intrinsic to the concept of death: "Because no mortal can return from being dead, any resuscitation or recovery must have been from a state of dying, but not from death."

Second, he claims to be a strong supporter of the dead donor rule, the unwritten "ethical axiom . . . that requires that the donor of multiple vital organs must first be dead." Third, he asks whether patients who have been pulseless for five minutes (as required by most DCD protocols) have *irreversibly* lost cardiac function. He acknowledges that if by *irreversible* we mean they could never be successfully resuscitated, then the answer is probably "no." As such, he concludes our current approach to DCD probably violates the dead donor rule.

This is a remarkably candid assessment, especially given that Bernat was the first author on a "Report of a National Conference on Donation after Cardiac Death," published in 2006, that emphatically states, "This national conference affirmed the ethical propriety of DCD as not violating the dead donor rule."[1]

How does Bernat reconcile these two contradictory statements? He does this by introducing a distinction between the concepts of *irreversible* and *permanent.* According to Bernat, cardiac arrest is *irreversible* if it cannot be reversed with currently available medical therapy, but *permanent* if the likelihood of auto-resuscitation is virtually nil and if there is agreement that no attempt to resuscitate will be made. In a persuasive argument, not duplicated here, Bernat claims that even though the diagnosis of death by cardiac criteria requires *irreversible* loss of cardiac function, the standard of care in medicine has always been to make diagnosis of death on the basis of *permanent* loss of that function.

Bernat claims it is ethically acceptable to remove organs from individuals who are not yet dead, in violation of the dead donor rule, because the "permanent cessation of respiratory and circulatory function always produces incipient, rapidly developing, and absolutely inevitable irreversibility of these functions."

In other words, since permanence is 100 percent prognostic of irreversibility, violation of the dead donor rule is acceptable. We think Bernat is essentially correct in his analysis of the dead donor rule in relation to DCD. This raises several interesting questions.

Is a 100 percent accurate prognosis of death sufficient justification for violating the dead donor rule? Bernat believes our current violations of the dead donor rule in the practice of DCD are justified, primarily on the basis of the absolute certainty of the prognosis that the patients will soon be dead. If this is a sufficient requirement for justifying exceptions to the dead donor rule, then it is worth examining other situations that also carry a 100 percent accurate prognosis of death. Consider the following two cases.

Case 1. A young man has been a quadriplegic for several years following a diving accident that transected his upper cervical spinal cord. He is unable to generate any breathing movements, and is completely dependent on mechanical ventilation. After long consideration, he requests his ventilator be withdrawn, knowing he will die. If his ventilator is withdrawn, his prognosis for death is 100 percent.

Case 2. A young man with acute severe cardiomyopathy is being supported with extracorporeal membrane oxygenation (ECMO), a form of cardiopulmonary bypass. Echocardiograms show that he has no cardiac function (his heart is at standstill). He has refused the option of being listed for a heart transplant, and has requested that ECMO be discontinued, knowing that he will die. If ECMO is withdrawn, his prognosis for death is 100 percent.

In each case, assuming the patient has decisional capacity to make this choice, the request to have life support discontinued would be supported by American law, ethics, and medical practice. Now assume that each of the patients passionately wants to be an organ donor, and desires to give as many organs as possible, and in a way that maximizes the chances for them to function well.

Under DCD protocols, the patient's doctor would discontinue life support, the transplant team would wait for five minutes of pulselessness, and then remove the kidneys (and perhaps liver) for transplantation. Suppose, however, that each of these patients instead requests that he be given a general anesthetic, so that as many organs as possible could be procured, without the damage caused by five minutes of ischemia. In addition to kidneys and liver, this could potentially include heart, lungs, pancreas, and small bowel.

Clearly, this approach would violate the dead donor rule. If, however, exceptions to the dead donor rule can be justified so long as death is absolutely certain, as Bernat argues for DCD, then these requests for donation under general anesthesia and before death should be honored. Bernat's views about *permanence* and *irreversibility* have implications for another type of case as well.

Case 3. A patient with amyotrophic lateral sclerosis (ALS) has swallowing dysfunction and must be fed through a gastrostomy tube. His pulmonary function is deteriorating, but he has firmly decided that he does not want to be mechanically ventilated. He has therefore decided to stop his tube feedings, so he will die from dehydration rather than respiratory insufficiency. He desperately wishes to donate his organs, but is told if he dies "naturally," by dehydration after stopping tube feedings, his organs will not be suitable for donation. Like the patients in the first two cases, he requests that his organs be procured under general anesthesia rather than lose the opportunity to donate.

Discontinuation of tube feedings is 100 percent prognostic of death. Bernat might argue the prognosis is not actually 100 percent, as it depends upon a decision made by the patient, and the patient may change his mind. But if Bernat does not agree that the ALS patient's decision not to be fed defines *permanence*, then he cannot claim that decisions not to resuscitate define *permanence* either.

Further, this patient would not have the opportunity to donate under current DCD protocols that require five minutes of asystole, but Bernat's analysis permits the procurement of organs from dying, but not-yet-dead, patients. Although we doubt Bernat intended to argue for such an extension of the pool of potential donors, there is nothing in his analysis that would prohibit donation in this case.

All three cases therefore involve clinical situations that are 100 percent prognostic of death. If, as Bernat argues, a 100 percent prognosis of death is a sufficient justification to violate the dead donor rule, then it should be permissible for all three of these patients to request that their organs be removed under anesthesia before death, even though doing so would violate the dead donor rule.

Is it wrong for physicians to "kill" patients? Some might argue that these three cases are not analogous to DCD, because, in each of these cases, the physicians would "kill" the patients as part of procuring their organs, whereas, in DCD, the patients are not "killed," but die from their underlying disease. This objection, however, is based on a common misunderstanding of one of the classical distinctions in medical ethics, that is, the difference between *killing* and *allowing-to-die.*

As Dan Brock and others have explained, *killing* is defined as an act that is the proximate cause of a person's death. Killings can either be morally justified or morally unjustified (killing in self-defense being a commonly cited example of the former). Under current DCD protocols, withdrawing life support is the proximate cause of the patient's death. In the above cases, if donation is performed as the patients request, the procurement of vital organs is the proximate cause of their death. Assuming certain other necessary conditions (the accuracy of the prognosis, the patient's consent, et cetera) both types of actions should be considered cases of justified killing.[2]

In common practice, clinicians resist referring to withdrawal of life support as justified killing, preferring to use the inaccurate, but euphemistically more palatable, description of *allowing-to-die.* While understandable, this description is factually in error. Bernat also clearly recognizes that withdrawal of life support should be seen as an act of justified killing when he observes, "If critics wished to assign causation to the death of the patient, what 'killed' the DCD patient was the earlier withdrawal of life-sustaining therapy, an act that is widely practiced and constitutionally protected, and, according to DCD protocols, would have been performed irrespective of organ donation."

We therefore conclude that the three cases above are indeed analogous to DCD, since, strictly speaking, patients are "killed" in both situations. That is, in the three cases as well as in DCD, the physicians are the proximate cause of the patients' deaths — by withdrawal of life support in the latter and by removal of vital organs in the former. To be clear, we do not advocate that physicians refer to withdrawal of life support as a "justified killing" in casual conversations with colleagues or patients, since, in everyday life, the word *killing* carries negative normative connotations that are not a part of its strict definition. But for purposes of examining the ethics of practices at the end of life, precision of language is important, and use of the terminology we have described is helpful in avoiding misunderstandings and confusion.

Is violation of the dead donor rule socially unacceptable? Bernat has been a strong advocate of the dead donor rule because he believes that it helps maintain public confidence in the organ transplantation enterprise. He supports an exception to the dead donor rule for DCD, however, because he does not think that the public will care. He notes that "most DCD patients will not care if they are declared dead earlier in a process that quickly and inevitably achieves irreversibility, because they wish to donate, and the difference to them is utterly inconsequential."

This perspective raises the more fundamental question of what the public actually thinks about the dead donor rule. While one often hears that the public would be outraged about violations of the dead donor rule, there is some evidence to the contrary. Recently, more than 1,000 residents of Ohio were surveyed about their views on brain death and the vegetative state, and, of those who gave consistent answers, fully 45 percent were willing to donate the organs of patients that they themselves considered to be alive, in violation of the dead donor rule.[3]

Newspapers frequently suggest violations of the dead donor rule, as when the *New York Times* stated, "The brain dead are candidates for a donation, but the operation generally must be performed before death,"[4] and the *Boston Globe* noted that a patient "was being kept alive so doctors could harvest his organs for donation."[5] If the public was so concerned about the dead donor rule, one might expect such stories to draw storms of protest, but they typically pass unnoticed. Even medical experts seem to be confused. On a recent episode of *Larry King Live*, Sanjay Gupta, MD, a medical correspondent for CNN and a practicing neurosur-

geon, explained to a national television audience that a brain-dead woman was not really dead, but nevertheless could be an organ donor.[6] Both research and anecdotes therefore suggest that concern of the public about maintaining the dead donor rule may be somewhat exaggerated.

CONCLUSION

We agree with Bernat that DCD is an ethically acceptable approach to organ recovery. As he points out, however, "DCD" is a misnomer: it is not "donation after cardiac death," since we now see that the donors are "dying but not yet dead."

The problem is not with DCD, but with the dead donor rule. It is a poor foundation for the ethics of organ transplantation. Until recently, the distortions were mostly at the margins of practice, but now, with the emergence of DCD, they are becoming apparent at the heart of transplantation activities.

Elsewhere, one of us (RDT) has argued that the correct ethical benchmarks for organ donation should focus upon the prognosis of the patient and the patient's consent, not upon the dead donor rule.[7] Many people believe that patients who are in a persistent vegetative state should be allowed to donate their vital organs.[8] The current precondition for DCD, under which it is first necessary to make patients dead, serves no interest for those who would wish to donate under such circumstances, and undercuts their desire to maximize the number and quality of donated organs.

In the modern intensive care unit, where as many as 90 percent of deaths occur following withdrawal of life support, many old ethical guideposts have lost their clarity and usefulness. It is no longer helpful, for example, to ask whether a particular treatment is "ordinary" or "heroic," since any treatment, whether as simple as taking vital signs or as complex as ECMO, can only be evaluated within the context of the patient's prognosis and values. Similarly, the ethics of organ transplantation have outgrown the guidance provided by the dead donor rule, and need to be reoriented and focused on factors that are most relevant to the patients making donations.

NOTES

1. J.L. Bernat et al., "Report of a National Conference on Donation after Cardiac Death," *American Journal of Transplantation* 6 (2006): 281-91.

2. D.W. Brock, "Death and dying," in *Medical Ethics,* ed. R.M. Veatch (Boston: Jones and Bartlett, 1989), 329-56.

3. L.A. Siminoff, C. Burant, and S.J. Youngner, "Death and organ procurement: public beliefs and attitudes," *Kennedy Institute of Ethics Journal* 14 (2004): 217-34.

4. L.M. Krieger, "A life-and-death proposal," *New York Times,* 5 June 1996.

5. S. Ebbert and R. Mullin, "Police pursuit claims a life," *Boston Globe,* 14 December 1999.

6. Jason Torres, interview by Larry King, *Larry King Live,* CNN, 30 June 2005.

7. R.D. Truog, "Is it time to abandon brain death?" *Hastings Center Report,* 27 (1997): 29-37; R.D. Truog and W.M. Robinson, "Role of brain death and the dead-donor rule in the ethics of organ transplantation," *Critical Care Medicine* 31 (2003): 2391-6.

8. K. Payne et al., "Physicians' attitudes about the care of patients in the persistent vegetative state: A national survey," *Annals of Internal Medicine* 125 (1996): 104-10.