

## Organ Donation After Circulatory Death (DCD)

Donation after Circulatory Death (DCD)<sup>i</sup> criteria have the goal of increasing the supply of available organs for transplantation. Various DCD protocols have been implemented, for example, for potential donors with devastating brain injuries who have no reasonable prognosis for neurologic recovery yet who do not meet the conditions for determination of death by whole brain criteria. CMDA supports the ethical practice of DCD to enable the altruistic act of organ donation for transplantation for the purposes of saving and prolonging life, treating disease, and relieving pain and suffering (see CMDA statement on Organ Transplantation). However, CMDA has grave concerns about the implementation of DCD protocols in actual practice. (See Appendix)

Therefore, CMDA advises that the following strict criteria must be met for the ethical practice of DCD:

1. The donor candidate must have terminal or end-stage pathology that would allow for planned withdrawal of life-sustaining medical treatment or ventilatory support, with the expectation that natural death is likely to occur soon thereafter (see CMDA statements on Euthanasia and Vegetative State).
2. Patients with disabilities who are not imminently dying should not be presented with premature options for organ donation. The disabled, the frail, and the elderly should not be led to believe that they have a duty to relinquish their organs as if their lives were of inferior value (see CMDA statement on Disabled Persons).
3. Psychological assessment to evaluate for possible depression and taking a spiritual history are recommended for any conscious patient who expresses a preference for withdrawal of life-sustaining treatment for donation of organs.
4. The patient's care and treatment decisions at the end of life should be free from external pressure from organ solicitations. Discussions whether to remove life-sustaining medical treatment or ventilator support must occur prior to initiating organ donation requests. Such decisions must be independent of donor status and made prior to and separate from the organ procurement organization contacting the patient, the patient's surrogate or family. The patient must not be coerced into a decision to hasten death.
5. Consent for donation can be withdrawn at any time prior to withdrawal of life-sustaining support. No coercion shall be used to maintain consent.
6. Quality palliative care and spiritual care must be provided prior to and during the dying process. Support to the family during this process is also crucial.
7. Any narcotics or sedatives administered must be justified by their being effective in the provision of the patient's comfort and not for the purposes of preserving a more usable transplant or hastening the time of death.
8. Any procedures performed for the sole purpose of preserving donor organ viability that would cause the patient distress or discomfort are prohibited. These include some pharmacological agents and the placement of vascular cannulae.
9. The diagnosis of death, whether by whole brain or circulatory criteria, must be based solely on the medical condition of the patient and made independently of any influence by the organ procurement organization.

10. The surgical staff responsible for organ procurement shall in no way participate in the weaning process or certification of death.
11. The dead donor rule must be scrupulously followed, i.e., at the time of organ retrieval the donor must meet valid criteria for death. Ethical organ retrieval occurs after the brain is dead but before transplantable organs have lost viability. It is ethically permissible to declare death either by the criterion of whole brain death<sup>ii</sup> or permanent cessation of circulatory function,<sup>iii</sup> in the latter case provided circulatory arrest has been present for a minimum of 5 minutes and the brain is not hypothermic or chemically or metabolically suppressed. Criteria for determination of death should be consistently applied and not relaxed with the intent of creating an opportunity for organ procurement.<sup>iv</sup>
12. Interventions performed for the purpose of maintaining or improving the quality of transplantable organs must not be the proximate cause of the death of the donor. CMDA opposes the use of interventions prior to the declaration of death that would intentionally deprive circulation to the patient's heart or brain, for example, inflating an occlusive balloon in the thoracic aorta during extracorporeal membrane oxygenation procedures to prevent oxygenated blood from reaching the heart and brain, since such interventions could directly cause the patient's death.<sup>v,vi</sup>
13. Physicians and other healthcare professionals who find DCD protocols to be morally objectionable or otherwise harmful to the patient must not be coerced to participate but should be allowed the freedom to recuse themselves without threat of reprisal (see CMDA statement on Healthcare Right of Conscience).<sup>vii</sup>
14. Hospitals should be free to implement DCD protocols based on ethical criteria more stringent than those of organ procurement organizations without being penalized or disenfranchised from collaborative organ procurement and transplantation networks.

## Conclusions

- CMDA affirms the importance of sufficient ethical safeguards in the determination of death prior to organ procurement in order to protect and respect the dignity of patients and to uphold the moral integrity of the medical profession.
- CMDA opposes abandoning the dead donor rule as a means of increasing the supply of transplantable organs. The dead donor rule is a fundamental moral principle that never should be transgressed for the sake of competing interests. Procuring life-sustaining vital organs from patients who have not yet died is incompatible with the ethical practice of medicine.
- CMDA finds proposals that would broaden DCD eligibility to include cognitively intact patients with irreversible neuromuscular paralysis who are not imminently dying yet who autonomously consent to donate their organs after electing to discontinue ventilator support<sup>viii,ix,x</sup> to be morally problematic.
- CMDA finds the practice of DCD as an avenue to euthanasia and physician-assisted suicide to be ethically unacceptable; this may include proposals that would extend DCD eligibility to those who are not terminal but who despair of their perceived quality of life.<sup>xi,xii</sup>
- CMDA is concerned that unethical DCD practices could, by association, discredit the ethical practice of organ procurement. Publicized abuses of DCD could damage the public's trust in transplant medicine and the public's willingness to volunteer as future organ donors.
- CMDA opposes policies and procedures that shift clinical emphasis from the care of patients toward their use as a means to others' ends. Subordinating the best interest of the patient to a

purportedly higher utilitarian good is antithetical to Christian love and the ethical professional practice of medicine.

## Appendix

The recommendations in this statement are based on the following aspects of DCD that CMDA considers to be morally problematic or subject to potential abuses.

### A. Whether death has occurred may be empirically unverifiable.

1. Within DCD time constraints, no empirical test for ascertaining death can directly verify that complete and irreversible cessation of brain function has occurred in an individual patient. However, ethically responsible decisions can still be made in situations where complete certainty is not possible. CMDA recommends holding to the 5- minute rule, even though it is somewhat arbitrary, since, based on current scientific understanding, it is reasonable to conclude that, after 5 minutes of total cerebral ischemia in adults, cerebral function is permanently and irreversibly destroyed. Five minutes of circulatory arrest, therefore, is a sufficient surrogate indicator of destruction of the brain leading to death. The 5- minute rule may be insufficiently short in pediatric patients.
2. At the time of declaration of circulatory death, the use of medications that suppress neurologic functions to facilitate the organ procurement procedure may render ambiguous the physical signs of brain death. However, neurological assessment is unnecessary for the clinical determination of death once circulation and cerebral perfusion have ceased for at least 5 minutes.

### B. Imminently dying can be difficult to define.

1. Once life-sustaining treatment or ventilatory support is withdrawn, the time to cessation of cardiac function varies and can be unpredictable.<sup>xiii,xiv</sup> However, well-chosen clinical measures can improve the accuracy of predicting which patients with irreversible brain injuries are more likely to die shortly after withdrawal of circulatory or ventilatory support.<sup>xv</sup>

### C. The potential for spontaneous autoresuscitation may render the determination of death uncertain.

1. Cardiac autoresuscitation rarely can occur after several minutes of asystole. However, if autoresuscitation were to occur after 5 minutes of asystole, it is still reasonable to conclude that irreversible death of the brain has occurred. This situation is analogous to the patient accurately declared dead by whole brain criteria who nonetheless still has a beating heart and circulation.
2. Animal research demonstrating that hearts from DCD donors under certain conditions can be resuscitated and potentially rendered suitable for transplantation<sup>xvi,xvii</sup> appears to undermine the validity of cessation of circulatory function as a criterion for DCD. However, even if circulatory function were to be restored after the declaration of death, the loss of brain function after 5 or more minutes of total cerebral ischemia is irreversible.
3. DCD has been questioned on the basis of whether circulatory failure is truly irreversible. However, DCD may be defended by the distinction between *permanent* cessation of circulatory function, meaning that function will not be restored because it will neither return spontaneously nor return as a result of medical intervention (an ethically valid

decision not to resuscitate has been made), in contrast to *irreversible* cessation of circulatory function, meaning that it cannot be restored by any known technology.<sup>xviii</sup>

#### D. Some DCD protocols may transgress a moral boundary.

1. DCD protocols that inappropriately shorten the time requirement for asystole may circumvent the dead donor rule.<sup>xix</sup> There is a crucial moral distinction between procurement of vital organs from an imminently dying patient and procurement of vital organs from a dead patient (see CMDA statement on Death). CMDA finds the removal of solid organs from potential DCD donors who are not dead to be morally problematic and inherently open to abuse.<sup>xx</sup>
2. Given the availability of two clinical criteria (whole brain and circulatory) by which to determine death, the choice of which to apply might appear to be made on the basis of the intent to recover organs rather than the medical condition of the patient. It is necessary to distinguish morally, and in practice to separate, (a) the decision to withdraw life-sustaining treatment, (b) the decision to donate organs, and (c) the determination of death. The clinical determination of death in DCD should be based on the prolonged absence of circulation to the brain and not the intent of treatment withdrawal or organ procurement.

#### E. DCD options might enable abuses.

1. Increasing attention to DCD technologies might, over time, shift the emphasis in clinical practice from doing what is best for the dying patient to giving preference to the utility of procuring organs for the benefit of others.
2. Ongoing ethical evaluation of evolving DCD medical practice options is needed as the technology evolves.
3. Ongoing ethical scrutiny of the social forces and economic industries that shape organ procurement policies and procedures is also needed.

*Approved by the House of Representative  
Passed unanimously  
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<sup>i</sup> Also known as Donation after Circulatory Determination of Death (DCDD), which is a form of Non-Heart Beating Donation (NHBD).

<sup>ii</sup> Bernat JL. The whole-brain concept of death remains optimum public policy. *Journal of Law Medicine & Ethics* 2006; 34:35-43.

<sup>iii</sup> Bernat JL, Truog RD, Miller FG. Point/counterpoint: Are donors after circulatory death really dead, and does it matter? *Chest* 2010; 138(1): 13-19.

<sup>iv</sup> President's Council on Bioethics. *Controversies in the Determination of Death*, Washington, D.C., December 2008.

<sup>v</sup> The inventor of the extracorporeal membrane oxygenation (ecmo) procedure was quoted as saying, "The unknown, yet unlikely, potential to resuscitate the brain of these potential DCD donors with extracorporeal support would be prevented with an aortic occlusion balloon." Jeff Evans, Protocol changes may increase donor organs. *Surgery News* 2008; 4(10): 1,10.

<sup>vi</sup> Wilkinson D, Savulescu J. Should we allow organ donation euthanasia? *Bioethics* 2012; 26:32-48. PMID: 20459428

<sup>vii</sup> Orr RD. The physician's right of refusal: what are the limits? *Christian Bioethics* 2012; 0:1-11, doi:10.1093/cb/cbs006

<sup>viii</sup> The United Network for Organ Sharing *Minimum Procurement Standards for Organ Procurement Organizations*, section 2.8.A, lists as suitable DCDD candidates end-stage musculoskeletal disease, pulmonary disease, and high spinal cord injury. See [http://optn.transplant.hrsa.gov/PoliciesandBylaws2/policies/pdfs/policy\\_2.pdf](http://optn.transplant.hrsa.gov/PoliciesandBylaws2/policies/pdfs/policy_2.pdf)

- <sup>ix</sup> DCD donation may occur in patients that do not have a neurological injury, but a disease that renders them ventilator dependent (i.e. amyotrophic lateral sclerosis)." See: [http://optn.transplant.hrsa.gov/PublicComment/pubcommentPropSub\\_309.pdf](http://optn.transplant.hrsa.gov/PublicComment/pubcommentPropSub_309.pdf)
- <sup>x</sup> Sulmasy DP. Donation after cardiac death in amyotrophic lateral sclerosis: stepping forward into uncertain waters. *Annals of Neurology* 2012; 71(2): 151-153. PMID 22367986
- <sup>xi</sup> Prokopetz JJZ and Lehmann LS. Redefining physicians' role in assisted dying. *New England Journal of Medicine* 2012; 367(2): 97-99. PMID 22784111
- <sup>xii</sup> The OPTN/UNOS Ethics Committee indicated at its November 2012 meeting that it plans to consider proposals to extend DCD eligibility to high spinal cord alive and aware donors as well as recovering a single or double kidney from living donor patients who are expected to become DCD candidates. Published at: [http://optn.transplant.hrsa.gov/CommitteeReports/board\\_main\\_EthicsCommittee\\_11\\_14\\_2012\\_11\\_32.pdf](http://optn.transplant.hrsa.gov/CommitteeReports/board_main_EthicsCommittee_11_14_2012_11_32.pdf)
- <sup>xiii</sup> Wind J, Snoeijs MGJ, Brugman CA, Vervelde J, Zwaveling J, van Mook WN, van Heurn EL. Prediction of time of death after withdrawal of life-sustaining treatment in potential donors after cardiac death. *Critical Care Medicine* 2012; 40(3): 766-769. PMID 21983365
- <sup>xiv</sup> Suntharalingham C, Sharples L, Dudley C, Bradley JA, Watson CJ. Time to cardiac death after withdrawal of life-sustaining treatment in potential organ donors. *Am J Transplant* 2009; 9(9): 2157-2165. PMID 19681825
- <sup>xv</sup> Rabinstein AA, Yee AH, Mandrekar J, Fugate JE, de Groot YJ, Kompanje EJ, Shutter LA, Freeman WD, Rubin MA, Wijdicks EF. Prediction of potential for organ donation after cardiac death in patients in neurocritical state: a prospective observational study. *Lancet Neurology* 2012; 11(5): 414-419.
- <sup>xvi</sup> Repse S, Pepe S, Anderson J, McLean C, Rosenfeldt FL. Cardiac reanimation for donor heart transplantation after cardiocirculatory death. *The Journal of Heart and Lung Transplantation* 2010; 29(7): 747-755.
- <sup>xvii</sup> Ali AA, White P, Xiang B, Lin HY, Tsui SS, Ashley E, Lee TW, Klein JR, Kumar K, Arora RC, Large SR, Tian G, Freed DH. Hearts from DCD donors display acceptable biventricular function after heart transplantation in pigs. *American Journal of Transplant* 2011; 11(8): 1621-1632.
- <sup>xviii</sup> Bernat JL. How the distinction between "irreversible" and "permanent" illuminates circulatory-respiratory death determination. *Journal of Medicine & Philosophy* 2010; 35(3): 242-255. PMID 20439357
- <sup>xix</sup> Joffe AR, Carcillo J, Anton N, deCaen A, Yan YY, Bell MJ, Maffei FA, Sullivan J, Thomas J, Garcia-Guerra G. Donation after cardiocirculatory death: a call for a moratorium pending full public disclosure and fully informed consent. *Philosophy Ethics and Humanities in Medicine* 2011; 6: 17. PMID 22206616
- <sup>xx</sup> Morrissey PE. The case for kidney donation before end-of-life care. *American Journal of Bioethics* 2012; 12:1-8.