



Donation After Cardiac Death (DCD) Questions and Answers

What is Donation After Cardiac Death?

Organ donation is possible only when someone has died under certain medical conditions. Some patients are diagnosed with brain death, which means the brain ceases functioning before the heart stops working. Others will succumb to cardiac death, which means the heart stops working first.

Donation After Cardiac Death (DCD) is an option for families of patients who have a severe neurological injury and/or irreversible brain damage but do not deteriorate to brain death. It allows them to honor their loved one's decision to be an organ donor. After a physician has determined that a patient has no chance for recovery and the family has decided to withdraw support, the family is offered the option of Donation After Cardiac Death. DCD donation directly helps those awaiting a life-saving organ transplant.

How does the DCD process work?

It is important to understand that donation after cardiac death is considered only after the family has decided to withdraw support. After the decision to withdraw support has been made and the patient is deemed to be a candidate for DCD, consent for donation is obtained. The patient is then allowed to pass away peacefully, with the assistance of all appropriate end-of-life comfort measures.

DCD donors must cease to have a heartbeat within 60 minutes of withdrawal of care. After death has been pronounced by the attending physician (who is independent of the transplant team), the organs for transplant are then surgically removed by the transplant team. If the patient's heart does not stop beating within 60 minutes, the organs are not recovered. The patient is taken to another unit until death.

The option of donation after cardiac death can bring comfort during a time of grief and allow a family to begin the healing process, as many families find comfort in the fact that their loved one's organs saved the life of another person.

How many organs can be recovered from a DCD donor?

While up to eight organs can be recovered from a single donor after brain death, only four organs – kidneys, liver and pancreas – are typically recovered from DCD donors. With very few exceptions, the heart and lungs are not recovered via DCD.

Q&A: Donation After Cardiac Death (cont'd)

How long has DCD been performed?

Prior to the introduction of brain death laws, DCD was the way in which all organs were recovered for transplant, and was a common practice prior to the 1980s. In fact, in 1967 a DCD recovery led to the donation for the first successful heart transplant. Prior to 2003, DCD was referred to as “non-heart-beating donation (NHBD)”.

How common is DCD?

Due to the special conditions that must exist for DCD to occur, such cases are considerably rarer than organ donation after brain death. Experts estimate that DCD could eventually account for 10% of all deceased organ donation cases, which numbered 7,593 in 2005.

Since 2000, the number of DCD donors has increased almost five-fold:

Year	DCD Donors
2000	119
2003	268
2004	395
2005	556

What is driving the resurgence in DCD?

The recent focus on DCD is driven by two key factors. First, the national organ transplant waiting list continues to grow, especially for kidneys. As of October 2006, the total number of candidates exceeds 93,000, with nearly three-quarters awaiting a kidney transplant. Second, there are many families who, having made the decision to withdraw support from their gravely injured loved ones, wish to donate organs. Donation after cardiac death makes it possible to honor those wishes. As a result, a federal initiative has placed a high degree of importance on organ procurement organizations (OPOs), hospitals and transplant centers increasing the number of organs recovered from DCD donors.

Which organizations are driving the resurgence in DCD?

More than 50 organ procurement organizations (OPOs) have established DCD protocols in accordance with guidelines from the US Department of Health & Human Services Advisory Committee on Transplantation, the HHS Organ Donation and Transplantation Breakthrough Collaborative, and the National Institute of Medicine’s Report (1997) and Recommendations (2000).

What is the profile of a DCD donor?

The potential DCD donor:

- has suffered a devastating neurological injury, such as head trauma, anoxic injury or intracranial bleeding;
- is maintained on a ventilator;
- does not meet brain death criteria
- family desires withdrawal of support
- is likely to die from cessation of cardiopulmonary function within 60 minutes following the withdraw of support

Q&A: Donation After Cardiac Death (cont'd)

How do you determine whether the patient is a candidate for DCD?

The most commonly used predictor of whether a patient is a potential DCD candidate is the University of Wisconsin Donation After Cardiac Death Evaluation Tool, which assigns numeric values to observable clinical parameters to yield an overall predictive score of suitability for donation after cardiac death. When the patient's medical condition is gauged using the tool, it can be predicted with greater than 90% certainty whether the heart will cease functioning within 60 minutes of removal from support.

How is death of the patient determined?

In accordance with recommendations from the Institute of Medicine, in controlled DCD death is determined by cessation of cardiopulmonary function for at least five minutes with electrocardiographic and arterial pressure monitoring. This determination is made by the attending physician, who is independent of the transplant team. Throughout the process, there are conflict-of-interest safeguards, with separate times and personnel for important decisions.

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