Issue: Donation After Cardiac Death (DCD)

What is Donation After Cardiac Death?

Organ donation after cardiac death (DCD) is not a new concept but one that has gained increased attention in the past several years as a viable and appropriate method of recovering organs. This was the very first method of organ donor recovery ever utilized and was called "non beating heart donation." In those early years only kidneys were recovered due to a variety of limitations including surgical technique, ischemia and available methods of preservation. Today, kidneys, liver, pancreas, and in some cases lungs and hearts can also be recovered and successfully transplanted from donors who have had a cardiac arrest. Tissues such as bone, cornea, heart valves, veins and soft tissues have always been and always will be recovered from patients following cardiac death pronouncement.

How is it different from Donation after Brain 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 still have minimal brain function. They are unable to breathe without the aid of a ventilator. 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. This allows them to honor their loved one's decision to be an organ donor and 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 life support. The family has met with their physician and has been told that their loved one has no hope of recovery. **After the family decides to remove support and the patient is deemed to be a candidate for DCD, then and only then, is 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. Once death is pronounced by the attending physician (who is not a part of the transplant team), the organs for transplant are surgically removed by the transplant team. If the patient's heart does not stop beating within 60 minutes, donation is no longer an option and the organs are not recovered. The patient is taken to another unit and cared for until death occurs.

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 common is DCD?

Donation after Cardiac Death is significantly less common cases than organ donation after brain death. However, experts estimate that DCD could eventually account for 10% of all deceased organ donation cases. Since 2000, the number of DCD donors has increased almost five-fold:

Year	DCD Donors
2000	119
2003	268
2004	395
2005	556

Why are we hearing more about DCD?

The recent focus on DCD is driven by two key factors. First, the demand for transplantable organs continues to increase at staggering rate, especially for kidneys. As of July 2007, the total number of candidates on the national organ transplant waiting list exceeds 100,000, with nearly three-quarters awaiting a kidney transplant. This organ shortage has resulted in the need to explore all potential organ donor sources. 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.

Less than 1% of hospital deaths are brain deaths but there are many other instances when life support is being withdrawn where the patient may have the opportunity to be a donor. Since 1992 in New Jersey we have had an average of 2-3 DCD donors a year. In 2004 we increased the number of hospitals with a DCD policy in place from 30% to 80%.

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
- cannot breathe without a ventilator
- does not meet brain death criteria
- family desires withdrawal of support
- heart is likely to stop beating within 60 minutes following the withdrawal of support

How is death of the patient determined?

This determination is made by the attending physician, who is independent of the transplant team in accordance with recommendations from the Institute of Medicine. In controlled DCD, death is determined by lack of cardiopulmonary function for at least five minutes with an electrocardiogram and arterial pressure monitoring.

How are the rights of the potential donor protected?

Throughout the process, there are conflict-of-interest safeguards, with separate times and personnel for important decisions. For example, the primary attending physician for any potential donor is NEVER a part of a transplant team. Organ recovery staff is separate from those who are providing care for the patient. The determination that a patient has suffered a life ending injury and the decision to withdraw support are made prior to any request/decision for organ donation.