Being prepared for donation after cardiac death

Depending on your perspective, donation after cardiac death (DCD) is a welcome boost for organ donation or an ethical quagmire.

In July 2007, DCD was shoved into the spotlight when a transplant surgeon in California was charged with 3 felony counts related to a patient who was expected to undergo DCD. Although no organs were donated, the surgeon allegedly violated the law and failed to follow the standard of care (sidebar).

Whether or not your facility performs donations or transplantations, you need to be prepared to answer questions about DCD. If your facility does organ recovery and/or transplantations, knowing about DCD helps ensure proper patient care and reduces liability risks.

What is donation after cardiac death?

The Uniform Declaration of Death Act of 1980 gives 2 options for declaring death:

- irreversible cessation of circulatory and respiratory function, referred to as cardiopulmonary death, or
- irreversible cessation of all function of the brain, referred to as brain death.

Use of brain death criteria began around 1968, with the work of the Harvard Ad Hoc Committee on Brain Death. Patients who experience brain death account for most of the organ donations in the US.

DCD puts the focus back on the first option: cardiopulmonary death. Once the physician declares death, qualified patients are immediately moved into the OR for organ procurement, so the donor’s organs are in the best possible condition for the recipient. The number of DCD donors has increased in recent years (sidebar).

What is the controversy?

Cessation of cardiopulmonary function has been used to determine death for years, says Kathryn Schroeter, RN, PhD, CNOR, surgical services education coordinator for Froedtert Hospital and assistant professor in bioethics at the Medical College of Wisconsin in Milwaukee.

“Before we had the Harvard brain death criteria, we used DCD to establish death; we just didn’t call it that,” she says.

So why are some people uncomfortable with the practice? It comes down to one word: irreversible. How much time should one wait before declaring death is irreversible? Does linking wait time with organ donation pose an ethical quandary?

Proponents of DCD say that although it’s impossible to define potential for reversal rigidly when you’re dealing with human beings, some guidelines can be established. In 2005, a national conference of experts on DCD met in Philadelphia and recommended that patients be observed for at least 2 minutes, but no longer than 5 minutes.

“No one has shown that the heart will restart after that time,” says Francis Delmonico, MD, director of medical affairs for The Transplantation Society and professor of surgery at Harvard Medical School, Boston. “The law says that in the absence of

Trends in donation after cardiac death

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1994-2003</td>
<td>2%</td>
<td>1,177 out of 55,206</td>
</tr>
<tr>
<td>2005</td>
<td>7%</td>
<td>560</td>
</tr>
<tr>
<td>2006</td>
<td>8%</td>
<td>645</td>
</tr>
</tbody>
</table>

Source: United Network for Organ Sharing.
circulation and breathing, you can declare a patient dead. The law is fulfilled, so there is no issue.”

Not so fast, says Arthur Caplan, PhD, Emanuel and Robert Hart Professor of Bioethics and director of the Center for Bioethics at the University of Pennsylvania, Philadelphia. “We don’t have standards for pronouncing DCD. Timing is everything, and timing is different from hospital to hospital, as it is with drug protocols and patient management. That must be resolved.”

It’s not just Caplan who is concerned. A qualitative study conducted by Mandell and colleagues in 2006 confirmed some nurses’ and physicians’ discomfort with DCD. The researchers analyzed transcripts from focus groups with 141 health care providers. The perioperative nurses who participated in the study agreed that DCD provides benefits such as increased availability of organs and easing the emotional turmoil of a family waiting for the brain death of a loved one. But the nurses and transplant surgeons expressed moral distress with the procedure, citing the lack of uniform national standards and the potential for conflict of interest between the decision to withdraw life support and the decision to donate organs.

**UNOS model elements**

The United Network for Organ Sharing (UNOS) has done just that. In June 2006, the Board of Directors for UNOS amended the bylaws to state that all transplant hospitals and organ procurement organizations (OPOs) must develop a policy for DCD by Jan 1, 2007. In March 2007, UNOS released Model Elements for Controlled DCD Recovery Protocols that member organizations must include in their protocols (sidebar).

Some ethicists question UNOS’s role. “[Protocols] cannot be set by UNOS,” says Caplan. “UNOS has a conflict of interest in that it seeks to get organs and gets paid to do so.” To clarify, UNOS is a nonprofit organization that administers the United States’ Organ Procurement and Transplantation Network.

Caplan leaves the door open to DCD, saying, “As long as there are agreed-upon national standards as well as training on how to determine DCD, then it is congruent with ethical guidelines.” He notes, however, that we currently have neither national standards (beyond UNOS) nor training. “The transplant field and organ procurement organizations have been pushed into this area without establishing clear-cut policies, and that is ethically very troubling.”

Not everyone agrees. Both the Institute of Medicine (IOM) and the Joint Commission support DCD. The Joint Commission’s standard on organ donation says that if the hospital can support recovery of organs after cardiac death, DCD is to be included in the organ procurement efforts. The elements of performance for this standard state that the hospital should “develop a donation policy that addresses opportunities of asystolic recovery, based on an organ potential for donation that is mutually agreed upon by the designated OPO, hospital, and medical staff.”

“This is not an unethical practice in any way,” says Schroeter.

**How is DCD carried out?**

Sandra Silvestri, RN, MS, CNOR, is a clinical nurse specialist in the operating rooms at Massachusetts General Hospital (MGH) in Boston. MGH began DCD donation in 1998, and in 2003, extubation moved from the ICU to the OR.

Three OR staff members participate in a DCD donation: the scrub nurse or surgical technologist, the circulating nurse, and a nurse coordinator, who cares for the family and is the liaison with the OPO and the ICU.

At MGH, patients are brought to a special anteroom in the OR for extubation where family members can be present. Although some hospitals allow family members in the OR, Silvestri says, “We want to keep the procurement team separate from the family. Not having the family members in the OR assures this and also cuts down on potential problems with infection control.”

Of course, most hospitals don’t have the advantage of having a special area for these patients, so extubation may be performed in the ICU, OR, or holding area, depending on available space.

As recommended by the UNOS model elements, a timeout should occur before
starting the withdrawal of life support. This provides the opportunity to verify the patient’s identity, and to ensure that the roles and responsibilities of the patient care team, OPO staff, and organ recovery team personnel are clear. Patients may receive morphine or a sedative before extubation to ensure there is no discomfort.

The IOM states that 5 minutes must pass after death has occurred before procurement surgery begins. Once the patient has been extubated, however, cardiopulmonary death may take from a few minutes to hours. Each OPO and transplant group determines how much time may lapse after death for the organs to be viable for transplant.

“We try to prepare families for that possibility [organs not being used], but it can be very difficult for them,” says Schroeter. Patients may be eligible for other types of donation such as corneas and bones.

Perioperative nurses make every effort to ease the family’s pain when life support is withdrawn.

“We honor family requests as much as we can,” says Silvestri. “We have a rocking chair for parents who want to hold their child, and a CD player to play music.”

**What does staff think?**

“Some staff really struggle with this [DCD],” says Silvestri. “They say, ‘Shouldn’t we be doing everything we can do?’” Schroeter adds, “They’re afraid the patient will feel something, and they don’t want to do harm.”

Education is key to help staff work through these feelings, and some may choose to “opt out” of participating.

Some nurses worry about legal implications. Silvestri says it’s important to know your state’s regulations. Massachusetts allows “first person consent,” meaning that a person’s declaration to be an organ donor on the driver’s license conveys consent without the need for additional consent. Silvestri emphasizes that the family is part of the organ donation discussion. As part of the discussion, OPO staff review a disclosure form with the family, and the form is placed in the patient’s medical record.

Silvestri says she reminds staff, “You always represent the patient. You advocate for that patient as you would any patient and continue to care for the patient until the procedure is over and you leave the OR.”

**Implementing a policy**

Dr Delmonico recommends using the UNOS model template to craft a DCD policy.

“You need to get everyone involved,” Schroeter says, including OPO staff; staff from the ICU, respiratory therapy, and OR; and transplant surgeons.

Policy implementation must be accompanied by education, so that staff are comfortable not only with the procedure but also with speaking up if an ethical conflict arises. Nurses new to DCD should be paired up with experienced nurses to ensure that the hospital’s policy and procedure are followed.

Silvestri advises not to forget the emotional aspects of the experience. She has brought in OPO staff, donor families, and recipient families to talk about what DCD meant to them.

**What’s next?**

Mandell’s 2006 study reported that participants feared that the public would view DCD as euthanasia, and certainly the consumer media reflects some of the public’s concern about “organ snatching.”

Dr Delmonico says nurses can help the public better understand DCD by talking about 2 items: “There should be a protocol in place for DCD, and the law is being fulfilled. This will help maintain the public’s trust.”

After a hesitant start, Silvestri says staff at MGH have embraced the DCD donation.

“Many patients may have wanted to donate organs but couldn’t because of the strictness of brain death criteria,” adds Schroeter. “DCD gives patients an option for donating. It’s a chance for something good to come out of a bad situation.”

*Cynthia Saver is a freelance writer in Columbia, Maryland.*
A transplant surgeon in California has been charged with 3 felonies in an attempted organ recovery at Sierra Vista Regional Medical Center in San Luis Obispo, according to court documents and press reports.

The surgeon, Hootan C. Roozrokh, MD, of San Francisco, was charged July 31, 2007, with dependent-adult abuse, administering a harmful substance, and unlawful prescribing of a controlled substance. If convicted, he could face up to 8 years in prison and a $20,000 fine.

His attorney says Dr Roozrokh did nothing wrong, and the charges are unfounded.

According to the district attorney, this is the first such criminal case against a transplant physician in the US.

The case involved 26-year-old Ruben Navarro, a severely disabled man who went into respiratory and cardiac arrest at a skilled nursing facility and was taken to Sierra Vista in a coma.

Dr Roozrokh was one of two transplant surgeons from the California Transplant Donor Network who came to San Luis Obispo on Feb 3, 2006, to procure Navarro’s organs. A transplant nurse also came to the hospital to coordinate the recovery.

According an Aug 4, 2007, report by The Tribune of San Luis Obispo, Sierra Vista employees who witnessed the events in the OR told investigators they were not familiar with the procedure, donation after cardiac death (DCD).

The patient was brought to the OR where witnesses said the transplant surgeons, OR nurse, and technician prepped the patient for organ donation. Also in the OR were the hospital’s physician on call and an ICU nurse. The transplant team was not supposed to care for Navarro until after his physician declared his death, according to state law.

Witnesses told investigators Dr Roozrokh ordered the ICU nurse to give a series of medication doses, totaling 220 mg of morphine and 80 mg of lorazepam. The transplant nurse said the hospital’s physician did not object.

Ultimately, the transplant was called off because although Navarro had been removed from the ventilator, he did not die. He was transferred to the ICU and died about 8 hours later.

According to the district attorney, the felony charges against Dr Roozrokh are related to prescribing excessive amounts of morphine and lorazepam, which were not for a “legitimate medical purpose,” and administering Betadine into the patient’s stomach while he was still alive.

The OR technician told investigators she saw Dr Roozrokh place a solution of Betadine and saline into Navarro’s feeding tube.

The OR nurse told investigators the events that night disturbed her, the newspaper reported. She said she questioned why the ICU nurse was giving Navarro the medications but was ignored.

Sierra Vista has said it has tightened its organ donation policies and provided the staff with more training.

Reports on the case can be accessed at www.sanluisobispo.com. Search the archives for Roozrokh. There may be a charge for articles.

References


Model elements for DCD protocols

The United Network for Organ Sharing (UNOS) protocol provides guidance in each of the following areas (examples provided):

- **Suitable candidate selection.** *Example:* The decision to withdraw life-sustaining measures must be made by the hospital’s patient care team and legal next of kin and documented in the patient chart.

- **Consent/approval.** *Example:* No donor-related medications can be administered or donation-related procedures performed without proper consent.

- **Withdrawal of life-sustaining measures/patient management.** *Example:* No member of the transplant team shall be present for the withdrawal of life-sustaining measures.

- **Pronouncement of death.** *Example:* No member of the organ recovery team or procurement organization can be involved in the declaration of death.

- **Organ recovery.** *Example:* Organ recovery may start after the declaration of death by the hospital patient care team.

- **Financial considerations.** *Example:* No donation changes should be passed on to the donor’s family.

Source: UNOS. To access the model elements, go to www.unos.org/policiesandbylaws/bylaws.asp?whatWeDo=true. Click on Bylaws Appendix B Attachment III: DCD Recovery Protocol Model Elements.