

Organ and tissue

Currently in the United States, approximately 18 people die each day waiting for an organ. Simple fact—organ and tissue donation saves lives. We fill you in on the process from referral to the final procurement procedure in the OR.

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Families facing the sudden, often traumatic loss of someone dear to them can feel as if everything is spinning out of control. As family members try to work through the how and why of their loss, the stress keeps mounting. Yet, many family members are able to see beyond the tragedy of the situation to give the gift of life to someone they've never met.

Organ donation undeniably saves lives, and the therapeutic benefits for patients with end-stage organ failure are well documented. It's also understood that family members participating in organ or tissue donation feel a sense of honor and gratitude for participating in something that helps others and contributes to the life legacy of their loved one.

Does the patient have donor potential?

How does a patient become an organ donor? It starts with the most important step in the process: a call from you. When a patient meets a clinical trigger, hospital personnel (most often the RN) make a call to the Organ Procurement Organization (OPO) or designee in their state. **Clinical triggers** vary slightly depending on the hospital and OPO, but are designed to provide early identification of a potential donor patient. Triggers aren't an exact science, but the purpose is to identify, as early as possible,

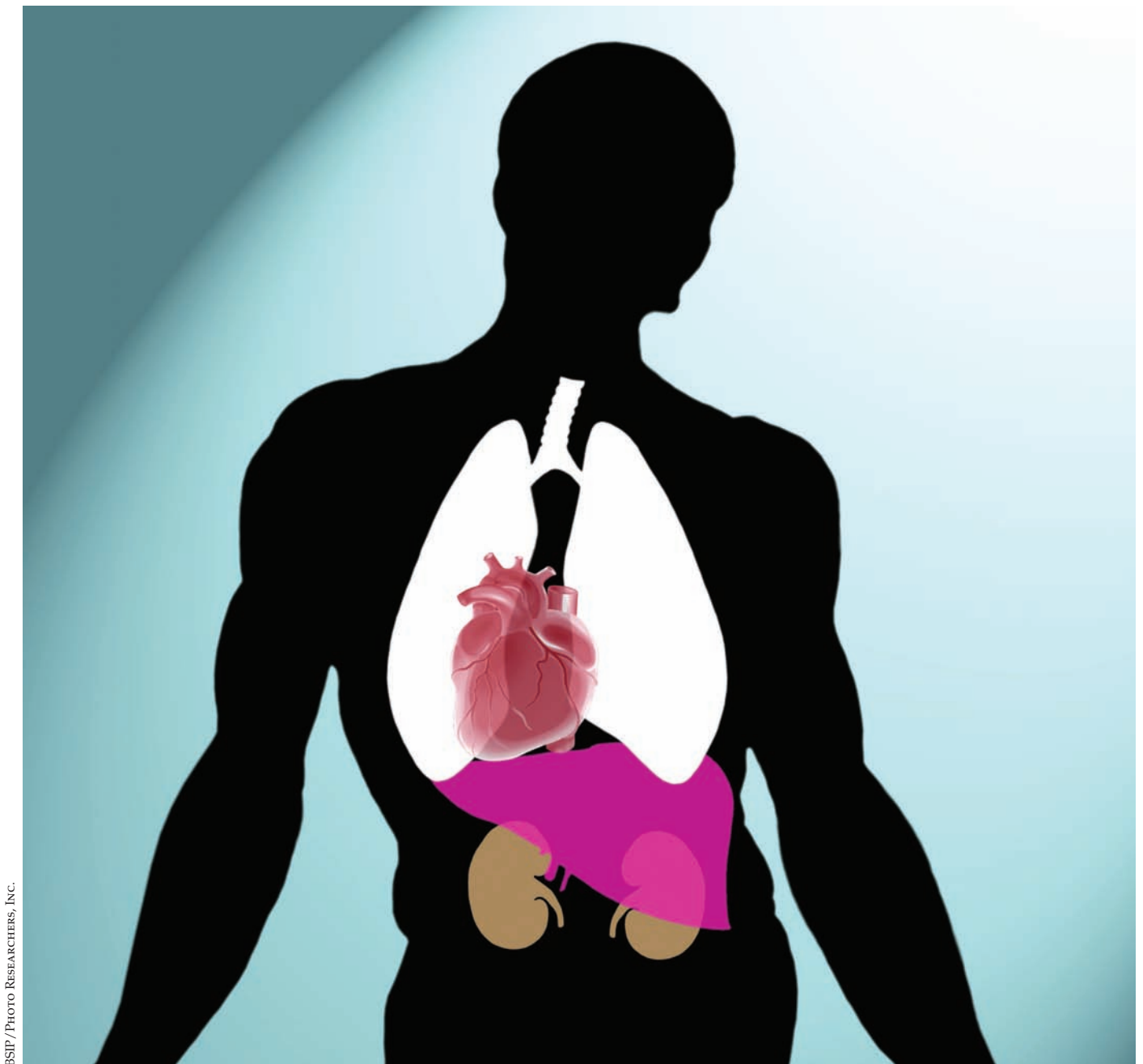
those patients who are likely to progress to brain death or patients who've been given a poor prognosis and termination of life support has been discussed.

After an initial screening by phone, the OPO associate will determine if donation potential exists. If the patient is ruled out, the hospital is required to call back with the cardiac time of death if the patient expires. If the patient has donation potential, a coordinator from the OPO will come to the hospital and review the patient's chart. The coordinator won't approach the family at this time; he or she is gathering information to determine suitability. This piece is important: You don't want to give the family the option of donation before having knowledge that the patient has the ability to become a donor.

If the patient has the potential to become an organ donor, an OPO associate or a hospital designee who has received specific training approaches the family. Timing is critical when sharing this option with the patient's family members. They've received devastating news and need time to absorb the information and decouple from the situation to be able to make a decision that can bring meaning and closure to circumstances beyond their control.

Many states have first-person authorization statutes that recognize donor designation as the only authorization required for

donation basics



donation to proceed. **Donor designation** describes an active effort on the part of the patient to register his or her decision to be an organ donor with a recognized database. State license branches are often used for this purpose, although this isn't the only avenue for those who want their decision registered. The OPOs have access to these databases and utilize them to determine designation status before conversations with families of patients who have donation potential.

Despite the fact that laws support this designation as consent, many hospitals continue to seek additional authorization from the family, and struggle with this complicated issue. In large part, how this information is treated when conversing with the family sets the stage for ongoing interactions and donation outcomes. Often, family members are relieved that the patient is donor designated and the burden of decision making is off their shoulders; the hospital is simply honoring the decision made by the patient.

At times, staff can feel that family members have been through so much and the burden of deciding about donation is too much for them. But I can tell you with utmost certainty that this isn't our decision to make, and donor designation should be viewed as an advance directive. We shouldn't presume to take this choice away from the patient. By the same token, if donor designation status is unknown, the family should be given the opportunity to make an informed decision. I've had the opportunity to hear many donor family members speak about their experience, and the knowledge that their loved one was able to give another person the gift of life gave them peace

and a degree of closure they would've struggled to obtain otherwise. The OPOs are sensitive to the enormity of the gift of organ donation and provide bereavement care to donor families.

Predonation steps

After authorization is obtained, a thorough medical and social history is taken by the OPO coordinator. This information helps determine the level of risk involved for the potential organ recipient. The process of determining organ function and recipient matching begins with a multitude of lab specimens, along with other tests and procedures. The OPO coordinator will spend a vast amount of time on the telephone, attempting to place the organs that are anticipated to be procured. This entire process from the time consent is obtained to the time the patient is transported to the OR for procurement takes approximately 24 to 36 hours. Families are instructed in advance that the process is lengthy and delays can occur.

Organ donors that we care for in the ICU can be one of two types: donation after brain death (DBD) or donation after circulatory death (DCD). **DBD donors** have suffered a catastrophic brain injury, and brain death criteria have been met. The important thing to remember is that brain death is death from both a clinical and legal perspective. **DCD donors** are unlikely to progress to brain death, but have a poor prognosis. In these situations, the family of the patient has already decided to withdraw life support before any approach regarding donation, although some families may initiate a donation conversation with staff.

DCD is viewed by many as the up-and-coming procedure in donation, but the reality is that it has been occurring since the 1960s. Long before the ability to determine brain death existed, organs were being procured from donors who experienced circulatory death. So, why are more clinicians familiar with DBD? When the ability



Facts and figures

- There are currently 114,712 people across the United States waiting for a life-saving organ. There were over 28,000 organ transplants performed in 2011, so the disparity between the need and availability is all too evident.
- A single tissue donor can impact the lives of up to 50 people. Depending on processing, some types of tissue can be stored for years.
- Organs are placed using a set of criteria, which includes the degree of illness, the blood and tissue type, how long the patient has been on the waiting list, the size of the organ in relation to the recipient, and the distance between the location of the donor and recipient.

cheat

sheet

to determine brain death came into being, it not only changed the face of donation, it also offered families a more definitive diagnosis and outcome.

For DBD donors, the heart continues to pump, so perfusion is maintained until the time of procurement. This equates to more viable organs procured from each donor. A DBD donor can donate up to eight organs, including the heart, two lungs, liver, pancreas, two kidneys, and small intestine. Commonly, only the liver and kidneys are procured from a DCD donor, although lungs have been obtained from otherwise healthy donors and successfully transplanted.

So why pursue DCD donation at all given this information? The list of individuals in need of an organ far outweighs the potential availability of organs, particularly for those waiting for a kidney. Kidneys from DCD donors have transplant outcomes nearly equal to those of kidneys from DBD donors. With so few hospital patients actually declared brain dead, DCD organs are a valuable source of viable organs.

Regardless of the type of donor patient for whom you care, the same goals apply. Good donor management equates with more transplantable organs. Although it may seem contradictory to clinically manage a patient when death has occurred, the management interventions are supporting the clinical therapies of the transplant recipient and are vital to successful outcomes. ***Donor management goals***, which were developed by both the transplant and critical care communities, are applied across the United States to improve perfusion, oxygenation, and fluid balance.

The OPO works with individual hospitals to maximize the potential organs that are transplantable. In a 2009 study, six OPOs reviewed 774 organ donor cases and found that when donor management goals were met, each donor averaged 4.87 organs transplanted. When goals weren't met, the donors averaged 3.10 organs transplanted.

did you know?

The U.S. Department of Transportation facilitates licensed drivers to register as organ donors if they choose. Visit your state's Department of Motor Vehicles website for more information.

Organ donation procedure

After careful coordination, the patient will be transported to the OR. For DCD patients, the family may accompany the patient to the OR suite. This can be quite emotional and upsetting for OR staff members if they've never been involved in end-of-life care. Education from ICU team members is beneficial before and during the DCD procedure. Your OPO partners can be a valuable resource, too.

The patient will be prepped and draped, keeping his or her face and hands uncovered so the family can touch the patient. He or she will then be extubated and cared for in the same manner as any patient who has life support withdrawn. The patient receives standard care, including comfort drugs, and is monitored closely throughout the process. At the time of circulatory arrest, the patient is examined by a physician in attendance during the entire process and circulatory death is pronounced.

At this time, the family is escorted from the OR suite and taken to a predesignated private area nearby. Typically, a hospital chaplain and a family services coordinator (FSC) from the OPO remain with the family and can provide updates as appropriate. After a 5-minute waiting period, procurement begins.

If the patient doesn't expire after a specified window, typically 60 to 90 minutes, he or she will be returned to the CCU, or a pre-arranged patient room on a lower acuity nursing unit, and the procurement process is abandoned.

If the patient is a DBD donor, family members will say their final goodbyes before organ recovery, but arrangements can be made for the family to see the patient

after the procedure. DBD is easier to facilitate for all involved because staff are more likely to have been involved with this type of donation. Also, because brain death has already been confirmed, the process can proceed immediately.

The circumstances of the patient's death may lead to him or her being a coroner's case. The coroner ultimately decides whether to investigate a death, and the reasons vary from suspected foul play to an unknown cause of death as described by the physician caring for the patient. These circumstances shouldn't exclude a patient from becoming a donor, but good communication with members of the healthcare team, the OPO, and the coroner is necessary to avoid delays and misunderstandings that may shut a case down prematurely.

Coordinators from OPOs work with institutions to ensure the process goes smoothly. Many hospitals have regular meetings using an interdisciplinary approach to discuss policies, procedures, and challenges. Case studies are helpful in identifying areas for improvement.

For the basics of tissue donation, see *Understanding tissue donation*.



Understanding tissue donation

Although many people think of organs when discussing donation, tissue donation can have just as much impact on the lives of many recipients. Donated corneas can restore vision to a recipient. Veins and arteries can restore circulation and are commonly used in coronary artery bypass graft surgery. Heart valves are used to replace defective valves. Bone has a multitude of uses and is commonly used for knee and hip replacement, dental implants, and spinal fusion surgery. Connective tissue can also be donated and is utilized to repair and rebuild joints. Donated skin is used for wound closures, to fill soft tissue defects, and to treat severely burned patients. The life-enhancing benefits of tissue donation can't be ignored.

Living donors

Living donation is another option that increases the pool of potential organs available. The organs that can be procured from a living donor include the kidney, a liver segment, a lobe of the lung, a portion of the pancreas, and, rarely, a portion of the intestine. The donor has the option to decide if he or she wants to have directed or nondirected donation. In **directed donation**, the donor

chooses the person who'll be the recipient of his or her organ. In **nondirected donation**, the donor donates the organ and allows the OPO to allocate it in the same manner as for DBD or DCD donation.

To be considered eligible to become a living donor, the person must be fit and in good overall health. Most chronic health conditions exclude a person from the opportunity to be a living donor, especially if the disease affects the organ being considered for donation. The living donor must consent to procedures and lab testing before surgery. This testing is to ensure the organ has good function and no anomalies exist that preclude the organ from donation. Living donation is a true act of altruism, but shouldn't be taken lightly. The person considering living donation should be well-informed of all aspects of the process. The living donor always has the option at any point during the process to change his or her mind.

Risks to the living donor are similar to the risks with any surgery, including bleeding and other unforeseen complications. The living donor may experience pain, fatigue, and scarring. In the event that the remaining organ or portion of organ fails, living donors could face the need for an organ themselves. There are also potential costs involved for the living donor. Although many insurance companies do cover the costs for the donor related to living donation, other costs, related to travel, housing, and lost wages, won't likely be reimbursed.

The potential organ recipient also faces many risks. First and foremost, he or she may not receive an organ in time. Wait times vary depending on the state in which the person lives, the organ needed, and his or her overall health. When an organ becomes available, the recipient faces many of the same risks involved with any surgery, including death. The post-op course will have similarities to any post-op patient. Recovery will involve a hospital stay, pain management, and close monitoring to assess organ function and early signs of rejection.

Regardless of the manner in which a recipient receives an organ, it's a life-changing event. With receipt of an organ comes an ever-present looming fear of rejection. The recipient will be subjected to a life-long course of antirejection medications used to induce a state of immunosuppression so the body doesn't reject the organ. These medications may be steroidal or nonsteroidal in nature, and the recipient may suffer adverse reactions. The recipient may also need to continue a regimen of other medications because organ replacement won't reverse any additional preexisting conditions unrelated to the specific organ that failed originally.

Helping families cope

Not every family consents to donation; the reasons vary greatly. A small percentage of families may cite religious reasons, although very few religions specifically oppose organ donation. Sometimes, families are concerned about the ability to have an open casket at the funeral. Concern about the patient's body remaining intact may lead to a decline to donate. Families have a great deal of information thrust upon them in these situations, and they simply may not understand the information they've been given related to the patient's prognosis. The best scenario is to provide family members with information and answers to their questions so that they can ultimately make an informed decision that's right for them.

For the nurse caring for a DBD or DCD donor patient,

the workload can change dramatically. These patients typically undergo many tests in quick succession. In addition, family members of the patient have received devastating

news and they need your support as well. The FSC from the OPO can be your greatest asset in these instances. The FSC provides the family with real-time answers to questions related to the donation process and also serves as support to the family. The FSC doesn't typically function in any clinical capacity, so he or she can take the time to be with the family and serve as a conduit to ensure the family is connected with additional personnel that may be needed, such as a translator or social worker.

The OPO will also have onsite clinical coordinators to guide treatment and ensure good donor management is maintained. Although the OPO does maintain a strong presence when a donor patient is in your unit, he or she is one part of a team consisting of physicians, nurses, respiratory therapists, and many other hospital personnel working toward a common goal.

The result? A life saved

Although organ and tissue donation can be characterized as involving extra work and expanded communication, most healthcare professionals acknowledge that participating in a donation process is rewarding. The

did you know?

Living donor transplantation first occurred in 1954. Kidneys are the most common organs donated by living donors. The risks are low for this type of donation because the remaining kidney is able to perform the duties normally shared by both kidneys.



On the web

- **Donate Life America:** <http://www.donatelife.net>
- **Mayo Clinic:** <http://www.mayoclinic.com/health/organ-donation/FL00077>
- **MedlinePlus:** <http://www.nlm.nih.gov/medlineplus/organdonation.html>
- **United Network for Organ Sharing:** <http://www.unos.org/>
- **U.S. Department of Health and Human Services:** <http://www.organdonor.gov/>
- **Womenshealth.gov:** <http://www.womenshealth.gov/publications/our-publications/fact-sheet/organ-donation.cfm>

uniqueness of the process—saving lives through the loss of life—is complex and complicated by the emotional aspects of loss of life. Yet, when dedicated professionals extend their expertise and compassion during the donation process, the end results are life-saving. ■

Learn more about it

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Organ and tissue donation basics

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