Organ and Tissue Donation and Recovery: The New Jersey Requirement

Faculty
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Faculty Disclosure
Contributing faculty, John M. Leonard, MD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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Division Planner Disclosure
The division planner has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Audience
This course is designed for all nurses licensed in New Jersey who may intervene to improve organ and tissue donation rates and facilitate the donation process.

Accreditations & Approvals
NetCE is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center’s Commission on Accreditation.

Designations of Credit
NetCE designates this continuing education activity for 1 ANCC contact hour.
NetCE designates this continuing education activity for 1.2 hours for Alabama nurses.
AACN Synergy CERP Category A.

Individual State Nursing Approvals
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Special Approvals
This course fulfills the New Jersey requirement for 1 hour of education on organ and tissue donation and recovery.
About the Sponsor
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Course Objective
The purpose of this course is to provide nurses with information regarding the clinical aspects of organ and tissue donation and recovery, including strategies to overcome barriers to donation.

Learning Objectives
Upon completion of this course, you should be able to:

1. Outline trends in organ donation and transplant needs.
2. Describe the organ/tissue donation process, including donor selection and preservation of tissues.
3. Utilize knowledge of the clinical aspects of organ/tissue donation to create comprehensive strategies that target critical barriers to donation and recovery.

Sections marked with this symbol include evidence-based practice recommendations. The level of evidence and/or strength of recommendation, as provided by the evidence-based source, are also included so you may determine the validity or relevance of the information. These sections may be used in conjunction with the course material for better application to your daily practice.
INTRODUCTION

Each week, dozens of people die waiting for an organ or tissue transplant—lives that could be saved by improving general knowledge of organ donation and recovery among healthcare professionals and the lay public alike. To this end, the New Jersey Board of Nursing requires coursework in organ and tissue donation and recovery in order to obtain/retain nursing licensure in the state of New Jersey. It is hoped that by educating nurses and nurse practitioners about organ and tissue donation, greater awareness of these issues will be fostered and that this will help to encourage more efficient donation and recovery of organs and tissue [1].

Point-of-care clinical providers are in a unique position to advocate for donation and to educate their patients as to the importance of being an organ donor. There are many obstacles to organ donation, including a significant amount of misinformation regarding the donation/recovery process [2]. This course is designed for nurses, nurse specialists, and nurse practitioners and addresses the impact of organ and tissue donation, the role of the clinical care provider, and the clinical aspects of organ/tissue donation and recovery. The purpose of the course is to improve understanding of key issues, address misconceptions, and better prepare clinical care professionals for the important role they can play in the donation, recovery, and preservation of organs and tissues from living and deceased donors.

IMPACT OF ORGAN AND TISSUE DONATION

When rightly conducted, organ and tissue donation is of enormous benefit to the health and well-being of the community. It is estimated that one individual can save 8 lives through organ donation and enhance up to 50 lives through tissue donation [1]. Despite strong public sentiment in favor of donation (95%), the majority of licensed drivers are not registered organ donors [3]. This is a problem on a national level, but the problem is even greater in New Jersey. Only about 33% of New Jersey drivers are registered organ donors, compared to about 42% nationwide [3; 16]. There are currently about 3,500 individuals in the state of New Jersey waiting for a life-saving transplant [7]. Every day, three New Jersey residents are added to the transplant waiting list, and every three days, one person in New Jersey dies waiting for a transplant organ [16]. In one 10-year period, nearly 2,500 New Jersey residents (and almost 75,000 nationwide) died because a transplant organ was not available [1].

ROLE OF THE CLINICAL CARE PROVIDER

The role of the health professional in donation and recovery is multifaceted. In addition to directly working with donors, families, recipients, and organ procurement organizations (OPOs), nurses have the potential to significantly influence their facility’s policy. Ways that nurses are directly involved include [4]:

- Working to actively identify possible donors
- Providing accurate and objective information concerning donation to the general public
- Providing clinical expertise, emotional support, and information to families who are considering organ and tissue donation
• Advocating for patients and families in the informed choice process, recognizing and respecting their cultural and religious beliefs
• Working closely with the healthcare facility, the OPO and/or tissue bank, and members of the healthcare team to seek consideration for such donation

It should be noted that some nurses, physicians, patients, and potential donors have personal cultural, ethical, or religious beliefs that preclude their willingness to donate, receive, or advocate for donors/recipient. The American Nurses Association Code of Ethics clearly supports the individual rights of both nurses and patients [4]. It is important to respect individuals’ personal belief systems; a nurse’s personal beliefs must not interfere with the patient’s right to self-determination. The nurse’s primary commitment is to the patient. However, certain healthcare professionals may not wish to become involved in the organ and tissue donation process or to participate in campaigns to increase donation in their community and/or facility.

For those who do wish to become more involved in donation efforts (either directly or indirectly), there are several steps that can be taken, including improving donor awareness and increasing enrollment in donor registries. It is recommended that interested nurses [4]:

• Become familiar with the local organ procurement program and encourage colleagues to do the same.
• Study the ethical, cultural, religious, and social issues surrounding the donation of organs and tissues.
• Take part in educational programs and activities regarding organ donation recruitment, including staff development and public awareness campaigns.
• Serve as a resource to colleagues, patients, and families for the distribution of accurate information regarding organ donation.
• Acquire the knowledge and skills required to work with members of the healthcare team, the OPO and/or tissue bank, and the facility in the identification and recovery of viable organs and tissue for transplantation.

Additionally, every care provider should understand a few basic facts about organ donation [5]:

• There is no cost to a patient/family for the donation of an organ or tissue.
• If a patient is sick or injured and admitted to a hospital, the priority is to save the patient’s life (not harvest organs).
• All major religions in the United States support donation as an unselfish act of charity that will save or improve someone’s life.
• When matching donor organs to recipients, a computerized matching system considers issues such as the severity of illness, blood type, time spent waiting, other important medical information, and geographic location. The decision is not biased toward a certain race or social status.

Even a small team of healthcare professionals can make a significant difference. For example, a group of nine intensive care unit (ICU) nurses working at the Albany Medical Center in New York (the region’s trauma center) banded together to boost the organ donation rate at their facility, which was already the greatest source of donated organs in the region [5]. These nurses stay with families as volunteers to guide them through the organ donation process and, once a donor has been declared brain dead (a requirement for organ donation), work to maintain tissue perfusion and oxygenation until the organs/tissues can be harvested. A private area is provided for discussing the facts of donation, including who can give consent, what the
options are for tissue donation, and how donation will affect burial or cremation [5]. The discussion is culturally sensitive and includes the assistance of an interpreter, if needed [9]. Another significant part of their program involves allowing time for all family members to say goodbye. The ICU nurse volunteers have made molds of patients’ hands, cut locks of hair, and organized visits from family pets. The support system that nurses create for family members of the donors has a powerful positive impact that can leave a lasting impression. Creating a donor tribute or commemoration program is a way to honor the deceased, ease families’ grief, and raise awareness in the community [11].

CLINICAL ASPECTS OF ORGAN DONATION

SELECTION AND PROCESSING

It is important for nurses, nurse practitioners, and the general public to have a clear understanding of the clinical issues central to organ donation, as this may help to overcome reluctance to becoming an organ or tissue donor. First and foremost, it should be reinforced that in every case the priority is to save the patient’s life (or, in the case of a living donor, to cause no harm to the donor). If a critically ill or injured patient is admitted to the hospital, all possible lifesaving efforts will be administered; being a registered donor does not give permission to withdraw proper care, nor does it incline physicians to “give up on” the patient. Physicians, nurses, and facilities have an ethical obligation to provide equitable care to the fullest extent of their judgment and abilities. Only after all lifesaving measures have been exhausted will the deceased become a candidate for organ donation.

As noted, clinical brain death is generally a prerequisite for deceased organ donation, and often an assessment by two physicians is required [6; 9]. Typically, these determinations are made by a neurologist or neurosurgeon [6]. According to the Uniform Determination of Death Act, an individual who has sustained either (1) “irreversible cessation of circulatory and respiratory functions,” or (2) “irreversible cessation of all functions of the entire brain, including the brain stem,” is dead; a determination of death must be made in accordance with “accepted medical standards” [15]. The time of death must be recorded in the patient record by the attending physician, who must also complete the death certificate. It is important to recognize that a coma is not brain death.

In certain cases, cardiac death is a satisfactory prerequisite for organ donation. This includes cases in which the following conditions are met [9]:

- The family or patient, via an advance directive or discussion with physician, has decided to withdraw life support.
- The suitability for donation has been determined by the New Jersey Organ and Tissue Sharing Network (NJ Sharing Network).
- Consent is obtained for a do not resuscitate (DNR) order and donation.
- The attending physician or designee not affiliated with the transplant or organ recovery team will be present when life support is withdrawn to pronounce the death.

The National Institute for Health and Clinical Excellence recommends that all patients who are potentially suitable organ or tissue donors be identified as early as possible, through a systematic approach.

Level of Evidence: Expert Opinion/Consensus Statement
According to Federal and New Jersey state regulations, when a patient is near death (“imminent death”) or has died, the local OPO should be notified and given pertinent patient information [6; 9]. This includes the patient’s name, age, and identifier number; cause of death or anticipated cause of death; past medical history and other pertinent medical information requested by NJ Sharing Network that is necessary for evaluation of suitability; and a phone number where next of kin can be reached. According to New Jersey policy [9]:

“In the case of imminent death, the referral must be made within one (1) hour of patient meeting clinical triggers of Glasgow Coma Scale score of <5 or loss of >2 cranial nerve reflexes, and prior to any discussion about organ and/or tissue donation with the patient’s family. The referral should be made prior to discussions of DNR, prior to withdrawal of the ventilator, and while the organs are still viable. In the event of cardiac death, the referral should be made as soon as possible, but no later than two hours after declaration of death.”

The NJ Sharing Network is the federally designated, state-certified OPO for New Jersey hospitals [9]. The OPO determines if the patient is a potential donor (based on information and tests performed by hospital staff), and an OPO coordinator is sent to the hospital within 90 minutes of the initial notification if the patient is suitable [9]. The OPO will initiate a thorough medical evaluation to determine donation eligibility. The coordinator will not speak to the family until it has been determined that the patient is eligible for donation and the family is aware of the impending death of their loved one. The next of kin may be interviewed to gather information about the donor’s social and medical history.

If the medical evaluation of the patient does not rule out donation, the OPO coordinator should discuss the next steps for donor management, plan of care, and approach for consent (including additional tests and notification of clergy, social work, or bereavement, if not already initiated) with the attending physician (or designee). The state donor registry is searched to determine if the patient has given prior consent by enrolling in the registry (i.e., has a donor card) or if intent to donate is indicated on the patient’s driver’s license. When these forms of consent are absent, the OPO will contact the next of kin to obtain consent according to state policy in the following order: spouse or certified domestic partner, adult child, parent, adult sibling, legal guardian, another person authorized or under an obligation to dispose of the body (e.g., hospital administrator, designated healthcare representative, holder of a durable medical power of attorney, person named in the decedent’s will) [9]. There should also be an attempt to access a living will or advance directive. Hospital staff should only approach the family in collaboration with the NJ Sharing Network designated requestor. During this time, the donor is maintained on artificial support and monitored by medical staff.

The OPO is responsible for contacting the medical examiner and the Organ Procurement and Preservation Network (OPTN) to initiate a search for matching recipients in the national database (operated by the United Network for Organ Sharing, under contract to the U.S. Department of Health and Human Services) [6]. Donor organs are matched with recipients based on various characteristics (e.g., blood type, tissue type, height, weight) and other considerations (e.g., patients’ waiting time, severity of the patients’ illness, distance between hospitals). As noted, gender, income, race, and social status are not referenced.
Information about patients awaiting transplants is stored in the OPTN system, and when the donor information is entered into the system, a matching recipient list (by organ/tissue type) is generated. The first match for each organ/tissue becomes the prime transplant candidate; however, the transplant surgeon makes the final decision based on various considerations (e.g., recipient health status, suitability of each organ/tissue, availability of the recipient) [6]. Local patients are typically offered most organs (75%), while the remainder is shared with recipients in other regions of the country.

All deceased patients may be considered for tissue donation [9]. Referral, consent, and matching are accomplished in a manner similar to that for organ donation. The decedent’s body should be placed in the morgue with saline-soaked gauze covering the eyes and must not be released to the funeral home until directed by the NJ Sharing Network or local eye bank [9]. Upon approval by the family and the medical examiner, recovery of tissue is performed by NJ Sharing Network-trained recovery surgeons either in the same hospital or at another location.

**RECOVERING AND TRANSPLANTING ORGANS AND TISSUES**

The arrival of the organ recovery surgical team is scheduled by the OPO coordinator [6]. The surgical techniques used in organ recovery are similar to those for other surgeries (i.e., careful incisions and a sterile operating environment). Before organs are removed, an ice cold preservation solution is used to flush each organ [12]. After removal, organs are placed in multiple layers of sterile containers and packed in an icy slush to cool (but not freeze) them. The exception is kidneys, which are typically kept on a pulsatile perfusion machine that constantly pumps preservation solution through the organ [12]. Tissue is recovered following organ recovery. At present, only certain organs and tissues can be donated/recovered (*Table 1*).

At the completion of the organ/tissue recovery process, incisions are surgically closed (except in cases of skin recovery). The NJ Sharing Network then contacts the funeral director regarding the timing and location of removal of the body [9]. Organ and tissue recovery does not typically interfere with an open-casket funeral [6].

After recovery, the viability of organs and tissues diminishes rapidly. The OPO coordinator arranges transport of the organs, most often by air for medium or long distances or ground for local transplants. Typically, the recipient awaits the new organ in the operating room. After the new organ arrives, the transplant team works quickly to complete the operation.

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<thead>
<tr>
<th>ORGANS AND TISSUES THAT MAY BE RECOVERED FOR TRANSPLANT</th>
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<tbody>
<tr>
<td><strong>Organs</strong></td>
</tr>
<tr>
<td>Heart</td>
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<tr>
<td>Intestine</td>
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<td>Kidney</td>
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<td>Liver</td>
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<td>Lung</td>
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<td>Pancreas</td>
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*Source: [8; 9] Table 1*
LIVING DONORS

Living donation has the potential to greatly reduce wait times for individuals in need of a transplant. The kidney is the most commonly donated organ from a living donor, followed by liver segment donation (usually to a family member). In rare instances, lung, intestine, or pancreas segments may be transplanted [10]. There are two types of living donation: directed donation, when a donor names a specific patient to receive their organ, and non-directed (altruistic) donation, when an organ is given to an unknown recipient. To become a living donor, individuals should contact the transplant program where the intended recipient is listed or, in the case of non-directed donation, a transplant center of their choosing. A list of transplant centers is available online at http://optn.transplant.hrsa.gov.

Living donation requires informed consent, and there are a few issues to be considered in this regard. At the forefront are the medical and psychologic risks of donation, which, despite little long-term data regarding complications of living donation, appear to be low [10]. The short-term complications of organ donation vary by organ type and involve the complications of anesthesia and major surgery, including allergic reactions to anesthesia, blood loss (requiring transfusions), blood clots, infection, pain, pneumonia, injury to surrounding tissue or other organs, and even death. The long-term complications of kidney donation include hernia, hypertension, reduced kidney function, organ impairment or failure that may lead to the need for dialysis or transplantation, or death [10]. Liver segment donation includes risks of abdominal bleeding, bile leakage, hernia, intestinal problems (including blockages and tears), organ impairment or failure (that could require additional treatments, surgery, or liver transplantation), wound infections, and death. Living donation is associated with the risk for psychologic distress stemming from the negative medical consequences of donation and from other sources, including negative body image from scarring and depression [10].

There are also financial aspects that living donors should consider. Although the direct medical costs of the donation and immediate follow-up are covered by the recipient’s insurance, medical costs arising from long-term complications of surgery may not [10]. Living donors have reported difficulty affording, obtaining, and/or keeping health, disability, or life insurance, as organ donation/surgery may be considered a pre-existing condition. Financial hardship can also arise from loss of wages, particularly when donors are faced with poor recovery from and/or complications of surgery.

OVERCOMING BARRIERS TO DONATION

A variety of barriers to organ donation and recovery exist, and nurses can act to overcome these barriers on many levels. It is important for facilities to be supportive of donation and to take steps to make the process as easy as possible for donors and their families. Providing adequate social and moral support to families can be very helpful. Instituting clinical pathways to better identify potential donors may improve organ/tissue donation rates.
Nurses should also assess their own feelings regarding organ donation, mortality, and spirituality/religion and ensure that personal opinions or feelings are not impeding patients’ rights in any way. Seeking education to better understand the donation and recovery process is a good first step.

Finally, patient and family education should be clear and accurate. Many myths about donation can be dispelled through effective education campaigns (Table 2).

<table>
<thead>
<tr>
<th>Myth</th>
<th>Fact</th>
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<tbody>
<tr>
<td>If emergency department physicians know the patient is an organ donor, they will not work as hard to save him/her.</td>
<td>Saving the patient’s life is the highest priority of all emergency department staff. It is a basic fundamental of medical ethics. Furthermore, the emergency department team is not involved with the recovery/transplant process.</td>
</tr>
<tr>
<td>An individual is too old to be a donor.</td>
<td>There is no set age limit on donation. Organs have been recovered from donors older than 90 years of age.</td>
</tr>
<tr>
<td>Cannot donate organs/tissue because religion prohibits donation.</td>
<td>All major religions in the United States acknowledge donation as a selfless act of kindness and compassion.</td>
</tr>
<tr>
<td>The cost of organ donation will be passed to family members.</td>
<td>There is no cost to donors’ families.</td>
</tr>
<tr>
<td>The body is mutilated during recovery, and an open casket will not be possible.</td>
<td>Care is taken to respect the body. The same techniques used during live surgery are employed, including sterile tools and environment. An open-casket funeral is possible.</td>
</tr>
<tr>
<td>A medical condition precludes organ donation.</td>
<td>The health status of the donor is determined at the time of death. Many medical conditions do not affect the viability of organs and tissues.</td>
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<tr>
<td>Organs are sold to the highest bidder.</td>
<td>Recipients are matched by a computer database based on factors that do not include socioeconomic status.</td>
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Source: [13; 14] Table 2

CONCLUSION

Organ sharing is a vital component of the healthcare system, but at present, there is large gap between those on transplant waiting lists and individuals who are willing to donate. It is certain that New Jersey nurses and nurse practitioners can help eliminate this disparity, as their roles often involve extended contact with patients and families, both in the hospital and in the community. The clinical and technical aspects of organ recovery are now well advanced. Hopefully, as healthcare professionals become well informed and better prepared to address these needs and related concerns, more will take advantage of the opportunity to “donate life” by donating organs and tissue to those whose lives depend on it.
Works Cited

Evidence-Based Practice Recommendations Citation