INTRODUCTION

The LifeCenter Organ Donor Network (LifeCenter) is a federally approved non-profit organ procurement organization established to assist with the recognition, management**,** procurement, and subsequent utilization of organs and tissues for transplantation.

Organ and tissue transplantation is considered the treatment of choice for many patients suffering from a variety of diseases resulting in end-stage organ/tissue failure. The success rate of organ and tissue transplantation continues to improve creating an increase in the number and types of transplants being performed. This increased demand obviously has caused a severe strain on the short supply of organs and tissues available for use in transplantation.

The purpose of this manual is to furnish information that will assist the health care professional in the process of organ and tissue donation. This manual will provide:

- The criteria used to determine organ and tissue donor suitability
- The role of the health care professional in the process of organ and tissue donation
- Guidelines for donor management
- Legislation and policies relating to organ and tissue donation.

Organ and tissue donation can improve health and hope for many patients. Donation can also provide comfort for families who have experienced the sudden loss of a loved one. *LifeCenter staff are available to assist you and your colleagues in every way possible. Do not hesitate to call us at anytime at 513-558-5000 or 888-558-2558.*

CRITERIA FOR ORGAN DONATION

Solid organ donation criteria are ever changing. Criteria that previously may have ruled a patient out for donation may no longer be utilized. Solid organs are recovered and successfully transplanted from donors as young as near full-term newborns to those individuals 75 years of age.

Solid organs currently considered for transplantation include: **Heart, Lungs, Liver, Kidneys, Pancreas, and Small Intestine.**

Deceased organ donors are patients who have suffered an irreversible catastrophic brain injury or disease of known etiology. The ideal candidate for this is the patient who is brain dead. The brain dead donor is an individual who has suffered an irreversible injury to their brain. However, it is possible for a person who is not brain dead to be a donor (please see chapter on donation after circulatory death).

Suitable donors may be found among patients with the following conditions:

- Acute brain or neurologic trauma
- Intracranial hemorrhage
- Primary brain tumors
- Drug overdose
- Cerebral anoxia
- Drowning
- Cardiac arrest
- Asphyxiation
- Hepatic encephalopathy

All donor suitability will be determined by LifeCenter staff, and are dealt with on a case by case basis.

Every area hospital has an agreement to contact LifeCenter to refer all deaths for determination of donation potential. All brain injured, vent dependent patients with a Glasgow Coma Scale ≤ 5, or patients missing 2 or more brain stem reflexes must be referred to the hotline within one hour and before ventilator and/or pharmacological support is removed/withdrawn on any patient.

A LifeCenter Donation Coordinator is available 24 hours a day, 7 days a week, by calling 513-558-5000 or 888-558-2558, to answer questions regarding organ donor identification and suitability.

DONOR REFERRAL

Deceased organ donors are patients who have suffered an irreversible catastrophic brain injury or disease of known etiology. The ideal candidate is the brain dead patient, however, an individual who is not brain dead can also be a donor (please see chapter on donation after circulatory death). The referral is made by calling the **Referral Hotline at 513-558-5000** or 888-558-2558.

Suitable donors may be found among patients with the following conditions:

- Acute brain or neurologic trauma
- Intracranial hemorrhage
- Primary brain tumors
- Drug overdose
- Cerebral anoxia
- Drowning
- Cardiac arrest
- Asphyxiation
- Hepatic encephalopathy

All patients who are brain injured, vent dependent with a Glasgow Coma Scale of ≤ 5, or 2 or more missing brain stem reflexes must be referred within 1 hour and before ventilator and/or pharmacological support is removed/withdrawn.

REFERRING POTENTIAL DONORS

Refer any patient who is brain injured, vent dependent with a Glasgow Coma Scale of ≤ 5, or missing 2 or more brain stem reflexes within 1 hour, and before ventilator and/or pharmacological support is removed/withdrawn. This allows LifeCenter staff adequate time to evaluate the potential donor and to assist/coordinate the request and authorization process with the healthcare team (Physicians, Nurses, Chaplains, Social Work, and other Healthcare Professionals). **Refer potential donors by calling the Referral Hotline at 513-558-5000 or 888-558-2558.**

The following basic information is helpful when calling the Referral Hotline. (Though helpful, this information is not required to call the Hotline).

1. Age
2. Sex
3. Diagnosis
4. Date of admission
5. Admission history and hospital course
6. Neurological status
7. Hemodynamic Status (BP, HR, on any Vasopressor medication)
8. Urine output
9. Most recent Renal Profile and CBC
10. Blood Type
11. Name of the physicians involved with the case.

The referral of a potential donor does not constitute a commitment on the part of the referring party, the donor hospital, or the donor family. Physicians, Nurses, Chaplains, Social Workers, or other Healthcare Professionals wishing to discuss or refer a potential donor should call the **Referral Hotline at 513-558-5000 or 888-558-2558.**

BRAIN DEATH

Overview

In the past, death was synonymous with the cessation of heartbeat and respiration. Physicians did not have to think about the diagnosis of death, because usually death occurred rapidly, in circumstances that were out of their control.

With the advent of mechanical ventilation, the diagnosis of death became more complicated due to the ability to artificially maintain heartbeat and respiration. The patient being maintained after loss of brain and brainstem function is different from one who is comatose and capable of spontaneous respiration. In 1959, a group of French neurophysiologists coined a term to describe the condition: "coma depasse" ("beyond coma"). Questions arose as to whether these patients were dead or alive.

Brain Death is the irreversible cessation of all functions of the brain, including the brain stem.

Reference
UNOS, "The Diagnosis of Brain Death", The Vital Connections Manual First Edition, 1993.

DETERMINATION OF DEATH

OHIO REVISED CODE

http://codes.ohio.gov/orc/2105.35

KENTUCKY REVISED CODE

http://www.lrc.ky.gov/krs/446-00/400.PDF

INDIANA REVISED CODE

http://iga.in.gov/legislative/laws/2016/ic/titles/001/articles/001/chapters/004/#section-3

BRAIN DEATH DETERMINATION GUIDELINES

Brain death is a legal and medically valid declaration of death. Legally, it is the time at which death is declared. Brain death differs from death declared via cardiopulmonary cessation, in that, artificial circulation and ventilation is maintained. The brain dead individual may be pink, warm to the touch, and may be connected to sophisticated monitoring equipment.

The guidelines are set forth in the following information:

ADULT BRAIN DEATH DETERMINATION GUIDELINES:

2010 Brain Death guideline.pdf

PEDIATRIC BRAIN DEATH DETERMINATION GUIDELINES:

\\lifefile\common\ Hospital Development

_AUTHORIZATION FOR ORGAN AND TISSUE DONATION

INTRODUCTION

The Revised Uniform Anatomical Gift Act (RUAGA) has been enacted in all states to provide regulations regarding organ and tissue donation. The RUAGA allows any person 18 years and older to donate all organs and tissues of their body for transplantation, research, or educational purposes after death has been determined. Authorization can be obtained by donor designation (authorization given by patient prior to death) via a donor registry, will, donor card, designation on driver's license or the RUAGA.

THE AUTHORIZATION PROCESS

It is the responsibility of the physician to discuss the patient's death with the family. Time should then be given to the family to understand the diagnosis. Families need time to acknowledge the death before they are presented with the opportunity for donation. This process is referred to as decoupling. This technique has been shown to increase authorization rates for donation.

All requests for organ and tissue donation must be performed with sensitivity to religious and cultural beliefs and in a caring manner. Approaching a grieving family about donation is always difficult. Research indicates that the manner in which a family is approached regarding donation is the main influence on the family's final decision. Family Services Coordinators (FSC's) with LifeCenter are available on a 24-hour basis to assist in facilitating the authorization process and have been specially trained to approach families in a sensitive manner. FSC's shall coordinate all requests with potential donor families.

If brain death declaration is imminent, the FSC will respond to the hospital in a timely manner. When preparing to speak with a family regarding authorization or notification of a donor designation, a team approach is optimal. By using staff from both LifeCenter and the hospital, this collaborative approach increases the authorization rate for donation. The hospital staff member, who is frequently trusted by the family, is present to offer support, and the FSC is present to provide answers to any questions they may have about donation. In most situations, only after brain death has been pronounced will the FSC, in collaboration with the attending physician, resident, nurse, or chaplain, approach the family regarding organ donation.

To utilize the Ohio, Kentucky or Indiana donor registries, LifeCenter or the appropriate tissue/eye recovery agency will access the appropriate donor registry. The patient's Social Security number or driver's license number is required to access the registry in most cases. If donor designation is present, LifeCenter or the appropriate tissue/eye recovery agency will

inform the legal agent/next-of-kin of the presence of donor designation. This is based on the donor's decision and according to legal requirements established by the State of Ohio, Kentucky and Indiana. If donor designation is present, LifeCenter or the appropriate tissue/eye recovery agency will inform the appropriate hospital representatives.

The Ohio Revised, Kentucky Revised, and Indiana Revised UAGA recognize authorization for organ donation from the legal agent/next-of-kin in the following order of priority (please see standards that refer to your respective state):

Ohio

1. Agent who could have made gift under Revised UAGA
    a. Where agent is Attorney in fact under durable POA for healthcare
    b. Expressly authorized to gift on decedent's behalf by another record signed by decedent
2. The spouse of the decedent
3. Adult children of the decedent
4. Parent(s)
5. Adult siblings
6. Adult grandchildren
7. Grandparent(s)
8. Adult who exhibited special care and concern for decedent
9. Persons acting as the guardian(s) at time of death
10. Anyone to whom right of disposition for body has been assigned or who has right to dispose of decedent's body.

Kentucky

1. An agent of the decedent at the time of death who could have made an anatomical gift under KRS 311.1915(2) immediately before the decedent's death.
2. The spouse of the decedent
3. Adult children of the decedent
4. Parents of the decedent
5. Adult siblings of the decedent
6. Grandparents of the decedent, and
7. The persons who were acting as the guardians of the person of the decedent at the time of death.

Indiana

1. An attorney-in-fact appointed by the decedent in a durable power of attorney executed pursuant to Section 62-5-5-1, if the decision is within the scope of his authority,
2. A Spouse of the decedent unless the spouse and the decedent are separated pursuant to one of the following:
    a) Entry of a pendente lite order in a divorce or separate maintenance action;
    b) Formal signing of a written property or marital settlement agreement;

c) Entry of a permanent order of separate maintenance and support or of a permanent order approving a property or marital settlement agreement between the spouse and the decedent;

3. Adult children of the decedent;
4. Parents of the decedent;
5. Adult siblings of the decedent;
6. Adult grandchildren of the decedent;
7. Grandparents of the decedent;
8. An adult who exhibited special care and concern for the decedent;
9. The persons who were acting as the guardians of the person of the decedent at the time of death; and
10. Any other person authorized or under obligation to dispose of the body.

The primary means, by which relatives' authorization is obtained, is through the use of a specifically drafted consent form. The UAGA allows for securing legal agent/next-of-kin's authorization by:

A. Document signed by him (her)
B. Fax
C. Telephone call in which 2 persons receive the message and one of them prepares written documentation of the message, by a telephone call that is recorded mechanically or electronically, or three way phone conversation with at least one witness on the line.

CORONER CONSENT

A death must be reported to the Coroner in all cases in which the death is unexplained or due to other than natural causes. Refer to your hospital policy to determine what qualifies as a coroner's case. All deaths must be referred to the respective County Coroner.

In all Coroner cases in which organ and tissue donation is being considered, the Coroner must grant permission for procurement before the organs or tissues are removed. It is recommended that the Coroner and/or Medical Examiner, if applicable, be contacted after authorization/disclosure has been obtained.

The date, time and name of the person in the Coroner's office and/or Medical Examiner's office granting permission must be recorded in the patient's chart.

ORGAN DONATION GUIDELINES & CHRONOLOGY of EVENTS

A. Patient meets one of the following Clinical Triggers:

1. The patient has a brain injury, is on a ventilator and with a GCS of 5 or less and/or unresponsive and missing two or more brain stem reflexes.

Glasgow Coma Scale

Eye Opening:	Best Verbal Response	Best Motor Response
4 Spontaneous	T tubed	6 Obeys command
3 to Speech	5 Oriented	5 Localized pain
2 to Pain	4 Confused	4 Withdraws
1 None	3 Inappropriate	3 Flexion to pain
	2 Incomprehensible	2 Extension to pain
	1 None	1 None

2. Families are considering the option of withdrawing ventilator or pressor support.

B. Health Care staff calls Life Center (513-558-5000 or 888-558-2558) within ONE HOUR of the patient meeting one of the clinical triggers for donation.

1. LifeCenter coordinator calls back and speaks with the referring party.
2. LifeCenter coordinator will request of referring person: pertinent information regarding patient, current neuro status, PMH, vital signs, vasopressors, labs, plan of care.
3. LifeCenter coordinator makes a plan with referring person to evaluate patient suitability if patient meets the clinical trigger and is not a medical rule-out.
4. LifeCenter coordinator will review chart, labs, and speak with patient's nurse and/or physician.

C. Neuro changes/change in hemodynamics:

1. Update LifeCenter coordinator with any changes.
2. Patient appears to be declining and deteriorating towards brain death; LifeCenter coordinator updated.

Steps for nurse to follow when it appears that the patient is deteriorating towards brain death:

Patient is missing all brain stem reflexes --

a. Notify attending physician of change in condition and the potential need to initiate a brain death examination. Please inform him/her that LifeCenter will be contacted and will possibly be on the unit. Develop plan as to timing and when nurse can expect physician to arrive to perform the brain death exam.

b. Concurrently notify LifeCenter coordinator of condition – be prepared to discuss current vital signs and plan of care.

c. Notify Respiratory Therapy of impending brain death exam and the need for them to assist with Apnea Test.

d. Gather supplies to the bedside for the exam, which may include a pen light /flashlight tongue depressors, Yankauer, ice water, and a 60 mL syringe.

e. If there are any signs of possible hemodynamic instability, ensure that an inotropic medication is at bedside and ready to administer if needed. This should take place prior to the brain death exam.

3. Plan is made for hospital to facilitate a brain death exam ***according to hospital policy and specified guidelines.***

4. Respiratory Therapy should be available for apnea test. Pre-oxygenation with 100% oxygen is required (Confirm with hospital policy/procedure). Continuous flow of oxygen is important during the apnea test to maintain stability and may be accomplished via numerous techniques, e.g. a T-piece attached to the endotracheal tube or a self-inflating bag valve system such as a Mapleson circuit connected to the endotracheal tube, or tracheal insufflation of oxygen using a catheter inserted through the endotracheal tube. Apnea test is performed under the direction of the Hospital physician.

5. Patient is pronounced dead by neurological criteria per hospital policy.

6. LifeCenter staff organizes a “Huddle” with hospital staff involved in the case.

7. Medical record is reviewed by LifeCenter coordinator to ensure documentation of date/time of death.

8. Plan is made between hospital staff (pronouncing physician, nurse, etc) and LifeCenter staff about explanation of brain death to family (hospital) and approach for donation (LifeCenter).

D. LifeCenter staff approaches family to discuss donation.

1. Authorization or notification of donor designation is obtained.

2. Family is informed of time period of 18-36 hours, + or –, depending on allocation process and stability of patient's hemodynamic status.

3. A Uniform Donor Risk Assessment Interview is completed by LifeCenter staff with legal agent/next-of-kin.

E. Throughout the next several hours and until the patient is taken to the OR for organ procurement, the hospital will continue to provide a nurse to care for the patient. In some situations, depending on how many organs the patient may be able to donate and if staffing patterns and patient census allows, it is beneficial to assign a 1:1 ratio due to the amount of work that can be involved. LifeCenter staff will remain on site for consultation and management of the donor patient.

1. Management of care will be transferred to LifeCenter under the orders of LifeCenter's Medical Director. If LifeCenter's Medical Director does not have hospital privileges, LifeCenter will request assistance from the Attending physician of record.

2. Order Set is given to nurse or unit clerk. Most hospitals have an Organ Donation Order Set in their EMR system. This will be for a full set of labs (CMP, cardiac enzymes, ABG, CBC, etc.), goals for vitals, UOP, etc. Goal is to maintain patient's stability and labs so that we can maximize the gifts to be given. The LifeCenter Medical Director will be determining/ ordering interventions for the donor patient via the Donation Coordinator.

a. Donation Order Set:

☐ Transfer care to LifeCenter Organ Donor Network
Dr. _____, MD
Donation Coordinator (DC):_____

NURSING
Assessment
☒ Actual Height
☒ Actual Weight
☒ Hourly vitals; HR, BP, Temp, SpO2, NICOM CO/CI

Intervention
☒ Draw blood tubes provided by DC:
3 red, 5 lavender, 2 pink, 3 yellow, 2 gray
☒ All labs are to be ordered STAT.
☒ Monitor temp and place on heating blanket to maintain temperature > 97 F. Notify DC if temp exceeds 101 F.
☒ Maintain HOB > 30 degrees, turn patient Q 2 hours.
☒ Strict I/O, Q 1 hour.
☒ Foley to gravity drainage.
☒ Place NG or OG and put to LWS.
☐ Arterial line / Central line

☐ Cheetah NICOM
☒ Notify DC for 70 > HR > 120, SpO2 < 96%, Serum Na > 150 UOP < 1mL/kg/hr or > 300mL x 2 hours.
☐ If patient is an eye donor, close eyes and place artificial tears or saline soaked gauze over the eyes.
☐ Initiate ACLS for cardiac event (maintain perfusion)

Respiratory Care
☐ Maintain current ventilator settings.
☐ Change ventilator settings to: (Vt 8-10mL/kg of IBW)
Mode _____, V_t _____, FiO_2 _____%, RR _____, PEEP _____
☒ ABG's PRN
☒ Oxygen Challenge: Change FiO2 to 100% & PEEP 5cmH_2O. Turn off sign PEEP. Draw ABG after 30 min. after ABG drawn, return to previous settings.
☐ Set FiO2 to lowest setting for PaO2 > 100 and SpO2 > 96%.
☐ Maintain P_{plat} < 30cmH2O & P_{peak} < 32cmH2O.
☐ Inflate ETT cuff to > 25 cmH2O.
☐ Start PEEP 5cmH2O (increase by 3-5 for PaO2 > 100mmHg)
☐ I Time or peak flow for an I:E of 1:1 – 1:2, if tolerated.
☐ Remove HME and add Heated Wire Humidity.
☐ Suction oral PRN.
☐ Recruitment maneuvers 40cmH2O / 40 sec or Recruit 60.
☐ Low Flow P-V loop for optimal PEEP, per DC.
☐ PEEP valve for Ambu Bag (hold at bedside for transport).
☐ Bronch adaptor (for the OR)
☐ Patient must be transported on the Transport Vent any time the patient is moved from the ICU (e.g. OR, cath lab, CT).
☐ DO NOT disconnect the vent circuit for bed transfer.

IV FLUIDS – per DC
Maintenance IV
☐ 0.9% NS @ ____mL/hour
☐ LR @ ____mL/hour
☐ 0.45% NS @ ____mL/hour
☐ Other: _____ @ ____mL/hour

MEDICATIONS
☒ D/C all medications (except respiratory medication, current vasopressors/gtts and Abx coverage. If no Abx, give Rocephin 1gram IV every 24 hours, with first dose STAT.
☒ Maintain a SBP ≥ 100 or MAP ≥ 60; if below these parameters, start Norepinephrine 16mg/250 D5W to maintain BP as directed above.
☒ Methylprednisolone 15mg/kg IV over 30 min. (Max dose 2gm)
☐ Vasopressin 100 units/100mL NS @ 0.04 units/min. Hold at bedside for DI.
☐ Vitamin K 10mg IVPB
☐ Levothyroxine (T4) 200mcg/500mL NS – Start at 10mcg/hr.
☐ Albuterol – 8 puffs MDI Q 4hrs, PRN

LAB
Blood Bank-STAT
☒ Type and cross for 3 units PRBC (set up CMV Neg). Consult DC first. Hold for floor.
☒ Type and screen
☐ Transfuse blood products, give CMV Neg, unless CMV status is known.

Blood Tests-STAT
☒ Renal panel now, then Q 4 hrs.
☒ CBC with Diff now, then CBC w/o Q 4 hrs.
☒ PT/INR, aPTT now, then Q 4 hrs.
☐ Hemoglobin A1c now.

☒ Magnesium and Phosphorus now, then Q 4 hrs.
☐ Amylase & Lipase now, then Q 8 hrs.
☒ Fibrinogen and D-Dimer now.
☒ ABG now, then Q 4 hrs.
☒ LFTs now, then Q 4 hrs.
☒ GGT and LHD now, then Q 8 hrs.
☒ Ionized Calcium now, then Q 4 hrs.
☐ CPK, CK/MB, Troponin-I now, then Q 8 hrs.

Urine-STAT
☒ Urinalysis with micro (include Na and protein) now, then Q 8 hrs.
☒ Urine Aerobic Culture

Microbiology-STAT
☒ Blood Cultures x 2 **(**with at least one peripheral stick)
☐ Sputum Gram Stain and Culture or BAL per DC

MEDICAL IMAGING

General Radiography-STAT
☒ CXR Chest AP 1 View **–** interpreted by a radiologist – R/O infiltrates and masses, lung measurements.

SPECIAL STUDIES

Cardiology-STAT
☐ 12 Lead EKG
☐ 2D Echocardiogram, per DC.

Pulmonology-STAT
☐ Bronchoscopy at bedside, per DC.

3. Lymph Node recovery will be performed by transplant personnel. Lymph Nodes will always be recovered at bedside unless a) the patient is a Donor after Circulatory Death (DCD) or b) the family does not want the recovery at bedside and asks that it be performed in the OR c) if the kidneys and/or pancreas will not be transplanted locally d) the donor is a child.

4. Transplant personnel will also perform A-line and Central line placement if required. Hospital physicians may be consulted for a bronchoscopy, echocardiogram or cardiac catheterization procedure while under the direction of the transplant surgeon. The transplant surgeon may request Hospital physicians to insert an arterial line or central line.

5. 3 red, 3 lavender, 2 pink and 3 yellow top tubes drawn and given to LifeCenter coordinator. (this will be for serologies, HLA, and ABO verification)

6. Labs will be evaluated for adjustments and protocol interventions (high sodium, low K, etc.)

7. Orders will be written for any medication administration or changes in medications.

8. Nurse should inform LifeCenter coordinator immediately if patient's vital signs fall below or above the goals listed in the order set.

9. T4 (Levothyroxine) will be started for patients receiving vasopressor support, and if this is to be a potential heart donor, an echocardiogram will be ordered to be completed 4 hrs after the T4 has been administered and vasopressors are titrated off.

10. Among the tests that will potentially be ordered- CXR, EKG, Bronchoscopy, ECHO, SWAN, Cardiac Cath, Chest CT. These tests may also be repeated per the request of accepting centers during the management of the potential donor under the direction of LifeCenter personnel.

    a. Donation is confidential therefore LifeCenter staff will not be able to share the names of accepting transplant centers with hospital staff. This practice will help insure the anonymity of both the donor and recipient.

11. Most labs will be repeated q2, q4, or q8 hours depending on the type of lab test.

F. **Once LifeCenter has received the serology results from their contracted facility and ALL patient data has been entered since admit, the process of organ allocation will begin. Occasionally labs, hemodynamic stability, or post-lung recruitment results must be reviewed prior to beginning the process of heart or lung placement.**

    1. While continuing to work with transplant centers on the allocation of organs, the LifeCenter coordinator will continue to enter donor information as it results, make electronic offers for organ allocation, and handle all calls in/out to potential transplant centers. During this time it is essential that the nurse keep the LifeCenter coordinator informed of any changes in stability, labs (as they result), UOP, or family issues. This process is detailed and may take up to 24 hours to complete.

    2. LifeCenter coordinator will handle communication with the OR, will give them an idea of a goal OR time, and will set the OR time once recipients have been found for all organs that can be transplanted. OR will handle contacting anesthesia.

    3. Once recipients are found for the organs and the patient is an hour or two from going to the OR, the LifeCenter coordinator will have the RN draw 2 yellow and 1 red top tubes for every organ allocated.

4. The patient's IV lines and IV poles should be minimized to make transportation to the OR as easy as possible. DO NOT D/C any drips running. DO NOT remove any vasopressors or anti-hypertensives if they are on hold; these may be needed by anesthesia.

G. **The patient will not be transported to the OR until the lead LifeCenter coordinator has verification that LifeCenter's Organ Recovery Specialist and the recovering surgeons are in the OR.**

1. When anesthesia arrives, the LifeCenter coordinator will give a bedside report about the patient prior to transport to the OR.

2. If heart and/or lungs are allocated, or in the case of instability, the patient will be transported on a portable vent.

3. Once transportation to the OR is complete, the patient will be under the care of the Donation Coordinator and donor surgeon in conjunction with anesthesia.

DONATION AFTER CIRCULATORY DEATH

There are many instances in which families want the opportunity to donate their loved ones' organs, but do not wish to prolong the process by waiting for the onset of brain death, or donation is hampered because criteria for formal brain death declaration might never be met. This type of potential donor is referred to as the donor after circulatory death (DCD). In this situation, after support is withdrawn at the request of the family, the patient would die in the PACU or a pre-determined location agreed upon by both hospital and OPO staff, of circulatory death.

As with all potential organ donors, each DCD is evaluated individually. However, patients who are HIV positive, have extra-cranial cancer or are over the age of 59 years are not considered for DCD. Appropriate candidates for DCD are limited to those patients in whom withdrawal of life-sustaining treatment is likely to result in death within an hour.

A Donation Coordinator will assess the patient to determine donor potential. Consideration of organ donation shall occur after a decision is made by the patient's family and primary physician to discontinue support. A physician who is not involved with organ procurement or transplantation will be asked to pronounce the death of the patient. In most cases, this is a physician who is from the ER, House physician, or the attending physician of the patient. A Family Services coordinator from LifeCenter, in conjunction with the hospital staff, will discuss the opportunity for organ and tissue donation with the family.

The family decides when and where support is terminated, taking into consideration hospital policy and physician preferences. Many families prefer to be with their loved ones in their final moments. In this case, support is terminated in the location defined in hospital policy. If the patient dies within 60 minutes of terminating support, or the pre-determined time frame, the patient will be taken to the operating room where organs will be recovered. As with cases that involve brain dead donors, LifeCenter is responsible for all costs associated with the DCD donation process.

The organs most frequently transplanted from DCD donors are kidneys. This is the organ with the highest demand. The liver is increasingly being transplanted from DCDs with good results. Pancreas and lungs have also been transplanted. It is likely that more organs besides kidneys will be considered for transplant from DCDs in the future, as the number of people waiting for a transplant continues to grow in the United States.

GUIDELINES FOR THE OPERATING ROOM FOR BRAIN DEAD DONORS

A. The Donation Coordinator will discuss the following with the Operating Room Supervisor:

1. The estimated time of procurement, taking into account the stability of the patient and the OR staffing situation.

2. Which organs are to be recovered and if out-of-state recovery teams will be involved.

3. Whether the institution is equipped for thoracic surgeries.

B. Supplies provided by the hospital needed in Operating Room:

1. basic major pack or laparotomy pack

2. lap sponges

3. basins (size and number depending on the organs procured)

4. sterile gowns (several)

5. two or more suction set-ups with Yankauer tips

6. bovies (2)

7. multiple IV poles

8. slush machines (please let us know in advance of OR time if you do not have ample slush available)

9. warming blanket

10. O silk

11. 2-O silk

12. 4-O silk (ask physician)

13. 6 vessel loops

C. Back tables:

1. 1 table needed for each organ recovered (kidneys only need 1 table)
2. 2 or more IV poles
3. laparotomy basin (2 large)
4. solutions U/W and/or EuroCollins *****
5. sterile storage jars with bags for packaging *****
6. instruments needed will be used from a laparotomy pack

***The Recovery Team will bring these items.**

D. In the Operating Room, the Donation Coordinator will oversee the following:

1. The urine bag is at head of O.R. table for anesthesia to track the UOP,
2. Blood may need to be drawn prior to heparinizing patient,
3. Anesthesia to administer Heparin 30,000 units (exact time given will be determined by transplant surgeon), at least 3-5 minutes prior to clamping the aorta,
4. Ensure availability of patient's chest x-ray (s),
5. 2 units of CMV negative packed RBC's, typed and cross-matched, available for transfusion,
6. The Donation Coordinator is onsite throughout the donation process to answer questions and provide guidance.

E. Organ Preservation:

NOTE: The flushing and preservation of the recovered organs will always be performed by a member of the Recovery Team.

1. The objective of the flushing procedure is to remove all blood products from the organ, preserve cellular integrity, and to limit the amount of warm ischemia time. WARM ISCHEMIA TIME is the time interval from cessation of effective circulation through the organ until the organ is flushed and cooled to a core temperature of about 4 degrees centigrade. This procedure must be performed as quickly as possible.

2. The flushing procedure also allows time for examination of each organ. A thorough examination of each organ will be made before it is packaged on the back table**.**

3. After flushing and packaging have been completed, the Recovery Team will dissect the spleen and the nodes from mesentery tissue for sterile packaging and further testing, which will be completed later.

F. Donor and Recipient Confidentiality

1. Donation is confidential. Hospital staff assisting the recovery team(s) shall keep all information confidential including but not limited to donor information and accepting transplant team information. This practice will insure the anonymity of both the donor and recipient(s).

2. Recoveries should occur with essential personnel only. Any non-essential personnel shall receive permission and sign a Release/Confidentiality form before observing in the operating room.

****IF YOU HAVE <u>ANY</u> QUESTIONS, ASK THE DONATION COORDINATOR OR THE SURGEON ****

ANESTHESIA GUIDELINES FOR DECEASED ORGAN DONORS

A. Hemodynamic stability throughout recovery procedure is goal.

1. Urine output maintained (1mL/kg/hr)

2. Systolic blood pressure maintained at or above 100mmHg

B. Donors will usually have:

1. Central Venous or Pulmonary Artery (PA) line

2. Two (2) large bore upper extremity IV lines

3. Upper extremity arterial line (preferred)

C. Blood pressure and fluid status should be maintained with crystalloid solutions.

1. Prefer LR or 0.9% NS.

2. If unable to maintain the blood pressure by crystalloid expansion alone:

a. Prefer 5% albumin as colloid choice.

3. Notify the coordinator of significant changes in blood pressure (<100 or >160).

4. Monitor urine output hourly.

5. Temp <97 or >101
CVP <4 or >11
O2 Sat <95%
HR <70 or >120
PCWP <4 or >10

D. Approximately 3-5 minutes prior to cross clamping of the aorta:

1. Recovering surgeon will ask that Heparin to be given intravenously, 30,000 units.

2. If the donor has a Swan-Ganz catheter placed, the recovering heart surgeon will request that it be pulled out of the heart (if it is utilized as IV access, it needs to be left in the Vena Cava.

3. The recovering surgeon will request removal of the NG tube prior to cross clamp.

E. Use a warming blanket on all donors and monitor temperature.

1. Temperature should not be less than 95ºF. Significant cardiac arrhythmias can occur in donors when the body temperature drops below 93ºF.

F. Laboratory tests as needed:

1. Liver Function Tests

2. Arterial Blood Gas (ABG)

3. Chem 7

4. Hgb/ Hct

5. Final BUN/ CREAT

6. CBC

7. CPK, Trop & CPK MB

****All laboratory results should be reported to the Donation Coordinator as soon as possible****

G. Drugs:

1. Consult with the Donation Coordinator prior to administering medication, especially:

a. Mannitol
b. Lasix
c. Heparin
d. Vasopressors

H. Hospital charges should be billed directly to:

LifeCenter Organ Donor Network
615 Elsinore Place, Suite 400
Cincinnati, OH 45202

DONOR HOSPITAL REIMBURSEMENT

The donor hospital will be reimbursed for all charges related to organ donation.

A. All charges incurred prior to the declaration of death of the patient and authorization for organ donation will be the responsibility of the patient or their legal agent/next-of-kin.

B. Upon acceptance of the patient as a potential donor by LifeCenter, any tests or procedures ordered/requested by a Donation Coordinator will be the responsibility of LifeCenter.

LifeCenter will submit a letter to the donor hospital requesting an itemized patient bill. This bill will be reviewed by LifeCenter's Donation Coordinator and those services, charges, etc. that are applicable to the donation will be promptly paid.

This procedure will prevent the donor family and/or insurance carrier from receiving charges related to organ procurement.

Any questions or concerns regarding the payment of procurement related charges may be directed to the Finance Department at LifeCenter.

TISSUE DONATION

Nearly two million tissue transplants are performed each year in the United States. The need for tissues of all types continues to increase as the life-saving and life-enhancing benefits of tissue transplantation are recognized. For many families, the decision to donate tissues of a loved one can give some meaning to the "TRAGEDY" of death.

Tissue donations come from a larger population than organ donors. Tissues are recovered after circulatory death. Many tissues may be recovered up to 24 hours from the pronounced time of death. The tissues that currently can be donated are **skin, bone, heart for valves, tendons, ligaments fascia, adipose, and cartilage.** Every individual who dies has the potential to be a tissue donor. Call the Referral Hotline to determine which tissues can be potentially donated.

Referrals for tissue donation are made to the LifeCenter through the Referral Hotline by calling (513) 558-5000 or 888-558-2558. Communication Specialists are available 24 hours a day to facilitate referrals. The phone referral may be made while you are preparing the patient for final good-byes with the family. The Communication Specialist will request basic information about the potential donor, such as: age, weight, cause of death, time of death, current and past medical history**.** If patient is medically suitable for tissue donation, the Communication Specialist will speak with the legal agent/next-of-kin regarding donation options while at the hospital or after arrival home, depending upon your consult determining the emotional state of the legal agent/next-of-kin. The Communication Specialists will only request on cases that are initially medically suitable.

Once the patient has expired, the Referral Hotline has been contacted on patient's death and the patient is determined initially medically suitable to donate tissue, the Communication Specialist will want to speak with the legal agent/next-of-kin over the phone about donation options and will disclose donor designation, if applicable. If the legal agent/next–of-kin is going to be approached at the hospital, secure a private area with a phone and make sure to provide tissues, a glass of water and your support. Giving the family time to start processing the death, or "decoupling" is just as important with a tissue donor as that of an organ donor.

If the legal agent/next-of-kin chooses to donate or the patient is a designated donor, the Communication Specialist will notify a LifeCenter Evaluator to evaluate the medical chart and determine medical suitability of the potential donor. The authorization form will be faxed to the hospital for inclusion in the patient's medical chart. The Evaluator will need to review all available medical records. If the potential donor is medically suitable, LifeCenter will be notified to initiate the tissue recovery process by the Evaluator. There is no need for the health care team to attempt to get the body released for tissue donation. LifeCenter will make arrangements to have the donor transported to the LifeCenter dedicated recovery facility. In the event the potential donor is also a coroner's case, the coroner will be contacted by LifeCenter to coordinate the recovery of tissues, either before or after the autopsy has been completed.

If the legal agent/next-of-kin authorizes donation or the patient is a designated donor, the Communication Specialist will complete a medical/social interview. The medical/social interview is just one of many steps in the screening process; it is required by the Food and Drug Administration Regulation #21CFR1271 for all donations with consideration for transplant. The purpose of this interview is to ensure the donated tissue does not harbor any disease, viral or otherwise, that could be transmitted to the potential recipients, as well as, to assure the tissues of the potential donor are healthy and will have a reasonable chance of grafting and producing the intended result.
This medical/social interview generally requires 15 - 30 minutes (depending on donor's history).
The information in the interview includes, but is not limited to:

1. Illnesses, Surgeries & Medications
2. Tobacco and Alcohol usage
3. Travel questions & Potential exposures
4. Vaccinations & Immunizations
5. High Risk Behavior questions
6. Other questions regarding medical history, social risks or behaviors found to have previously transmitted an illness through donated tissues

The following is a list of tissues that can be donated and utilized in transplantation and/or research and changes at times:

1. Skin
2. Bone
3. Adipose
4. Tendons/Ligaments
5. Heart for Valves
6. Juvenile Cartilage
7. Eyes/Corneas

When calling the Referral Hotline for potential donors, the Communication Specialist can inform the hospital staff of the potential tissue that can be donated.

EYE DONATION

The United States supplies eye tissue for approximately 76,000 sight-restoring corneal transplants each year. When the tissue needed for ophthalmic research and medical education is included, these numbers climb even higher.

The Cincinnati Eye Bank for Sight Restoration is the agency responsible for the procurement, processing and distribution of eye tissue in this region. The eye bank services the Greater Cincinnati area, encompassing approximately thirty hospitals and other facilities in Southwestern Ohio, Northern Kentucky, and Southeastern Indiana.

Although the Cincinnati Eye Bank primarily collects corneas for transplant, it also supplies tissues for researchers throughout the United States and for educational purposes within the Tri-State. Accordingly, almost anyone can be an eye donor. The ability to see does not affect suitability, so patients who have cataracts, have had eye surgery, or wear glasses can still donate.

As with organs and tissues, the Referral Hotline handles all referrals. A Communication Specialist will obtain patient demographics and significant medical history to help determine if the patient can be a potential eye donor and the potential use of the tissue (transplant or research/education).

If the patient is a potential eye donor, the Referral Hotline Specialist will work with the family to obtain authorization for eye donation, either through Donor Designation or by requesting authorization from the legal agent/next-of-kin. Once authorization for donation has been obtained, the Communication Specialist will contact the eye bank technician, who will arrive at the hospital shortly. Because of the delicate nature of the cornea, the eye bank requests assistance from hospital personnel in maintenance of the tissues until the recovery can take place. Maintenance consists of the following steps:

1. Close the eyelids
2. Elevate the head 30-40 degrees
3. Cover the eyelids with cool, wet gauze pads

After the eye bank technician arrives, but prior to recovery, she/he will review the donor's chart looking for factors which might preclude donation. The technician also conducts a physical assessment of the donor, checking the eye for visible evidence which would prevent transplant and examining the body for any signs of possible high risk behaviors. Although tissue may be deemed unsuitable for transplantation, the technician may proceed with recovery of the eyes if authorization has been obtained for research/education.

The eye bank technicians typically recover the entire eye globe (enucleation) for donors intended for research/education use, and recovers only the cornea (excision) for donors suitable for transplant.

Tissue suitability is further determined in the eye bank laboratory. The technician evaluates the corneal tissue for suitability for transplant using a slit lamp and a specular microscope.

A laboratory also performs serological testing on the cadaveric blood sample obtained by the eye bank technician. In some cases, if the donor received blood, blood products, or fluids, the technician may need to obtain a blood sample from the hospital laboratory to ensure that a non-hemodiluted sample is sent for testing.

The donor's legal agent/next-of-kin will also be asked a series of questions regarding the donor's medical and social history that have been mandated by the FDA to rule out donors from high- risk behavior categories..

The eye bank is available 24 hours a day (513-861-3716) to answer any questions and welcomes any feedback or suggestions. Hospital staff members are vital to our primary mission of sight-restoration and we want to ensure that our relationship continues to be a good one.

Body Donation


UC Body Donation Program_CCMS chan


BODY DONATION PROTOCOL.doc


Conditions to accept body - no form.doc


CERTIFICATE FOR BEQUEATHING BODY

The Body Donation Program at the University of Cincinnati-College of Medicine is an important community service that allows an individual to make a lasting and meaningful contribution to medical science. Enrollment is open to anyone 18 years of age or older, and is best accomplished prior to death; however, there are two ways to enroll in the program:

Before Death: Contact the Department of Cell Biology, Neurobiology and Anatomy at the University of Cincinnati College of Medicine at **(513) 558-5612**. Forms will be sent, which should be completed and distributed as indicated. These are considered a legal document. A wallet card will be issued to the registrant upon return of one copy of the registration form to the Body Donor Program. The registration form represents a contract and part of this agreement is the acceptance of the body by the University of Cincinnati-College of Medicine.

At Death or After Death: A bequeathal may be made by the legal next-of-kin after death by notifying the Department of Cell Biology, Neurobiology and Anatomy to determine acceptability. If the donor is not registered in the program before death, the program may decline the donation if the donor's body does not meet specific criteria.

The death of a whole body donor is still required to be referred to the Referral Hotline as there is still an opportunity for the patient to also be a cornea/eye donor.

RELIGIOUS VIEWS ON ORGAN AND TISSUE DONATION

Families have the right to be informed of the option of organ and tissue donation regardless of any religious beliefs they may express. LifeCenter feels they have a right to be informed of the opportunity for organ and tissue donation. All major religious groups support organ and tissue donation; some of these include Protestants, Catholics, Jews, Muslim, and Jehovah's Witnesses.

The following information may be used as a reference in summarizing the position of the major religious groups in our country today.

Amish	The Amish consent to transplantation if it is for the health and welfare of the transplant recipient.
Buddhism	Buddhists believe organ donation is a matter that should be left to an individual's conscience. There is no written resolution on the issue.
Catholicism	Catholics view organ donation as an act of charity, fraternal love and self sacrifice. Transplants are ethically and morally acceptable to the Vatican.
The Church of Christ Scientist	Christian Scientists do not take a specific position on transplants or organ donation. Christian Scientists rely on spiritual rather than medical means for healing. The question of whether to donate is left to the individual church member.
Gypsies	Gypsies, on the whole, are against organ donation. Although they have no formal resolution, their opposition is associated with their belief in the afterlife. Gypsies believe that for one year after death, the soul retraces its steps. All of the body parts must be intact because the soul maintains a physical shape.
Hinduism	Hindus are not prohibited by religious law from donating their organs. This is an act of individual decision.
Islam	In 1983 the Moslem Religious Council initially rejected organ donation by the follower of Islam, but it has reversed its position, provided donors consent in writing prior to their death. The organs of Moslem donors must be transplanted immediately.

Jehovah's Witnesses	According to the WatchTower Society, the legal corporation for the religion, Jehovah's Witnesses do not encourage organ donation, but believe it is a matter best left to an individual's conscious. All organs and tissues however, must be completely drained of blood before transplantation.
Judaism	Judaism teaches that saving a human life takes precedence over maintaining the sanctity of the human body.
Mormons	The Church of Jesus Christ of Latter Day Saints considers the decision to donate organs a personal one. Mormons must weigh the advantages and disadvantages of transplants individually and choose the one that will bring them peace and comfort. The church does not interpose any objection to an individual decision in favor of organ and tissue donation.
Protestantism	Protestants encourage and endorse organ donation. The Protestant faith respects an individual's conscience and a person's right to make decisions regarding his or her own body.

COMMON QUESTIONS ABOUT DONATION

The following are commonly asked questions about organ and tissue donation. The answers are provided to help the staff member better respond to issues about organ and tissue donation they may not understand.

Who can be a Donor?

Anyone over the age of 18 can indicate their desire to be an organ donor by registering to be a donor or expressing their wishes to family members. Relatives can also donate a deceased family member's organs and tissues, provided the person giving consent is at least 18 years of age. Persons under the age of 18 can also be donors.

Can you donate an organ while you are still alive?

Certain kinds of transplants can be done using living donors. For example, almost 30% of all kidney transplants are performed with living donors. They are often related to the person needing the transplant, and can live normal lives with just one healthy kidney. Also, there are new methods of transplanting a part of a living adult's liver to a child who needs a liver transplant. Parts of a lung, liver or pancreas from a living donor can also be transplanted.

Can you still choose to donate if you are under the age of 18?

Yes.

Why should you consider being an organ/tissue donor?

Advances in medical science have made transplant surgery increasingly successful. Transplantation is no longer considered experimental, but rather a desirable treatment option. The major problem is obtaining enough organs for the growing number of Americans needing them. Even though most donors contribute multiple organs, there still are not enough to meet the need and many people die while they are waiting for an organ.

Are there religious objections to organ/tissue donation?

Most major religious groups in the United States approve and support the principles and practices of organ/tissue donation. It is consistent with the life preserving traditions of these faiths. However, if you have any doubts, you should discuss them with your spiritual leader.

How does a person become a donor candidate?

Register to be a donor. Also, many states have a registry where you can indicate your wishes to be a donor on your drivers' license.

It is also extremely important to let your family know that you want to become an organ and tissue donor at the time of your death. It is very important that they know you want to be a donor because it will then become easier for them to follow through with your wishes.

What if members of your family are opposed to donation?

You can have an attorney put your request in writing. This document, along with your donor registration card, may help ensure your wishes will be honored. In any event, tell your family that you have decided to become an organ/tissue donor in the event of your death.

Does the donor's family have to pay for the cost of organ donation?

No they do not. The donor's family neither pays for, nor receives payment for, organ and tissue donation. Hospital expenses incurred before the donation of organs in attempts to save the donor's life and funeral expenses remain the responsibility of the donor's family. All costs related to donation are paid for by the organ procurement organization.

Will the quality of hospital treatment and efforts to save your life be lessened if staff know you are willing to be a donor?

No they do not. An organ procurement organization does not become involved until other physicians involved in the patient's care have determined that all possible efforts to save the life of the patient have failed.

Does organ donation leave the body disfigured?

No. The recovery of organs is conducted in the operating room under the direction of qualified surgeons; trained technicians using surgical procedures recover tissues. Neither disfigures the body nor changes the way it looks in a casket.

Is it permissible to sell human organs?

No. The National Organ Transplant Act (Public Law 98-507) prohibits the sale of human organs. Violators are subject to fines and imprisonment. Among the reasons for this rule is the concern of Congress that buying and selling of organs might lead to inequitable access to donor organs with the wealthy having an unfair advantage.

How are recipients matched to donor organs?

Persons awaiting transplants are listed at the transplant center (hospital) where they plan to have surgery, and also on a national computerized waiting list of potential transplant patients in the United States. Under contract with the federal government, UNOS (The United Network for Organ Sharing), maintains the national waiting list. UNOS operates the Organ Procurement and Transplantation Network and maintains a 24-hour telephone service to aid in matching donor organs with patients on the national waiting list.

When an organ becomes available, several factors are taken into consideration in identifying the best-matched recipient(s). These include medical compatibility of the donor and potential recipient(s) on such characteristics as blood type, weight, and age; urgency of need; and length of time on the waiting list. In general, preference is given to recipients from the same geographic area as the donor because timing is a critical element in the organ procurement process.

Will being an organ/tissue donor disrupt funeral plans?

No. In cases of organ donation, the recovery of organs takes place normally in a matter of hours after consent from the family is given. In the case of tissue donation, the tissues must be recovered within a specified time period. In most cases where the coroner may be involved, permission for recovery of organs and tissues is not difficult to obtain. This is the responsibility of the recovering agency.