Where do Organ Donors Come From?

Hearts become available when a person suffers an accident or illness that causes the brain to die but leaves the heart undamaged. Without brain function, the donor is legally dead. Because a mechanical ventilator breathes for the donor, the heart continues to beat and the liver, kidneys and other vital organs continue to function.

The process of obtaining the heart for transplantation is coordinated by the Transplant Society of Michigan or Gift of Life. This agency is notified when a heart is available and makes arrangements for our medical team to obtain the heart.

Families of donors give permission for organ removal. They welcome the opportunity to pass on the gift of life to those in need.

How are Candidates and Donors Matched?

Heart transplant candidates are matched with available donor hearts based on the urgency of the candidate’s condition, blood type and physical size. In adults, the donor and the recipient should be about the same weight. In children, the weight range is 1.5 to 2 times the weight of the child. The donor heart must easily fit into the transplant candidate and be capable of pumping enough blood to meet the candidate’s needs.

Sex, race, religion, beliefs, or any other physical or nonphysical characteristics do not matter when matching the patient with a donor heart.

How Long is the Operation?

The actual operation lasts about five hours. The recipient will spend additional time in the operating room being prepared for surgery and waiting for the donor heart.

How Long are Transplant Patients Hospitalized?

Most recipients remain in the Pediatric Cardiothoracic Unit (PCTU) approximately two to three days and are then moved to a regular hospital room for about 10 days to two weeks. However, the length of the stay is patient specific and some stays are longer than others.
How Do Recipients Take Good Care of Their Heart Transplant?

Transplant recipients are expected to take medications as prescribed by the transplant team. They are also expected to attend transplant, primary care, and specialty care visits as scheduled. Recipients need to maintain a healthy lifestyle in physical, nutritional and emotional categories.

What is Life Like After a Transplant Operation?

Most heart transplant recipients rate their quality of life as good. The goal of transplantation is for the recipient to participate in an active, healthy lifestyle. Many heart transplant recipients resume a normal active life, including playing, attending school, participating in sports, earning a living or maintaining a household.

Becoming an Organ Donor

To find out more about organ, eye, and tissue donation and registration as a donor, contact one of the following:

Gift of Life
3861 Research Park Drive
Ann Arbor, MI 48108
Phone: (800) 482-4881
www.giftoflifemichigan.org

Coalition on Donation
700 North 4th Street
Richmond, Virginia 23219
Phone: (804) 782-4920
Fax: (804) 782-4643
Email: coalition@donatelifemichigan.org
www.donatelifemichigan.org
Other Reputable Online Resources:

American Society of Transplantation  
Phone: (856) 439-9986  
www.a-s-t.org

United Network for Organ Sharing (UNOS)  
www.unos.org

Transplant Living  
www.transplantliving.org

For further resources, please contact either the social worker or transplant coordinator.

Raising Funds to Cover Medical Expenses

If the out-of-pocket costs seem to be more than you would be able to afford, you may wish to consider raising funds to help cover the medical costs. Organizations are available to assist you and your family with fundraising for medical treatments. They often have information designed to help families with the process. The contact information for some of the organizations that work with transplant patients and families is shown below.

• Help Hope Live  
150 N. Radnor Chester Road, Suite F-120  
Radnor, PA 19087  
(800) 642-8399 toll-free  
www.helphopelive.org

• Children's Organ Transplant Association  
2501 West COTA Drive  
Bloomington, Indiana 47403  
(800) 366-2682 toll-free  
www.cota.org

• National Foundation for Transplants  
5350 Poplar Avenue, Suite 430  
Memphis, Tennessee 38119  
(800) 489-3863 toll-free  
www.transplants.org
Transplant-Related Web sites

- **University of Michigan Transplant Center - www.michigantransplant.org**
  The official web site of the University of Michigan Transplant Center geared to provide patients with information regarding the transplant center and the transplant process for all solid organ programs.

- **Transweb - www.transweb.org**
  A non-profit educational web site serving the world transplant community based at the University of Michigan Health System.

- **Scientific Registry of Transplant Recipients (SRTR) - www.srtr.org**
  The Scientific Registry of Transplant Recipients (SRTR) provides ongoing research to evaluate information and tracks all transplant patients from the time of transplant through discharge, then annually, until graft failure or death.

- **United Network for Organ Sharing (UNOS) - www.unos.org**
  United Network for Organ Sharing is a non-profit, scientific, and educational organization that administers the Organ Procurement and Transplantation Network (OPTN), collects and maintains its data and serves the transplant community.

- **Gift of Life - www.giftoflifemichigan.org**
  Gift of Life (GOL) is the only non-profit full-service organ and tissue recovery agency in Michigan since 1971. As an organization, Gift of Life acts as an intermediary between the donor hospital and the recipient transplant center providing all the services necessary for organ, tissue, and eye donation.

- **Transplant Living - www.transplantliving.org**
  Transplant Living is a web site supported by the United Network for Organ Sharing and is promoted as your prescription for transplant information.

- **Organ Procurement and Transplantation Network (OPTN) - www.optn.transplant.hrsa.gov**
  The Organ Procurement and Transplantation Network (OPTN) is a unique public-private partnership that is committed to improving the effectiveness of the nation’s organ procurement, donation, and transplantation system.
The University of Michigan Health System / MLabs Blood Drawing Stations

MLabs offers adult and pediatric blood drawing services through the University of Michigan Health System Health Centers. No appointment is necessary for routine services; please call ahead to schedule glucose tolerance testing. Hours are subject to change without notice. **Laboratory results are available only through your physician’s office. Please do not contact the specimen collection facility or blood drawing station for test result information.**

**ANN ARBOR**

**UM East Ann Arbor Health Center**  
4260 Plymouth Rd.  
Phone: (734) 647-5685 Fax: (734) 647-6457  
Hours: Monday – Thursday, 7:00 am – 7:30 pm; Friday, 7:00 am – 5:30 pm; Saturday, 8:00 am – 12:30 pm

**UM West Ann Arbor Health Center**  
4900 Jackson Rd., Ste A  
Phone: (734) 998-7036 x.226 Fax: (734) 998-4488  
Hours: Monday, Wednesday, Thursday, Friday, 8:00 am – 5:00 pm; Tuesday, 10:00 am – 7:00 pm  
(Closed 2nd Wednesday of each month, 8:00 am - 9:30 am)

**UM Briarwood Health Center Building 2**  
400 E. Eisenhower, Ste B  
Phone: (734) 998-4413 Fax: (734) 647-3718  
Hours: Monday, Tuesday, 8:00 am – 6:00 pm; Wednesday – Friday, 8:00 am – 5:00 pm

**UM Briarwood Heath Center Building 3**  
Briarwood Medical Group, 375 Briarwood Circle  
Phone: (734) 998-0284 Fax: (734) 998-6502  
Hours: Monday, Tuesday, 7:00 am – 5:00 pm; Wednesday, 7:00 am – 7:00 pm; Thursday, 7:00 am – 5:30 pm; Friday, 7:00 am – 4:30 pm  
(Closed 1st Tuesday of each month, 8:00 am - 10:30 am)

**UM Briarwood Health Center Building 10**  
Briarwood Family Practice, 1801 Briarwood Circle  
Phone: (734) 913-0167 Fax: (734) 998-4489  
Hours: Monday, Wednesday, 8:00 am – 7:00 pm; Tuesday, Thursday, Friday, 8:00 am – 5:00 pm; Saturday, 8:00 am – 12:00 noon  
(Closed 2nd Wednesday of each month, 8:00 am - 1:00 pm)

**UM Medical Center**  
Cardiovascular Center, Floor 3, Reception A  
Phone: (734) 232-5111 Fax: (734) 232-5130  
Hours: Monday – Friday, 7:00 am – 6:00 pm

Children’s and Women’s Hospitals, Reception B  
Phone: (734) 232-5672 Fax: (734) 232-5682  
Hours: Monday – Friday, 7:00 am – 6:00 pm

Comprehensive Cancer Center, Floor B2  
Phone: (734) 647-8913 Fax: (734) 647-8937  
Hours: Monday – Friday, 7:00 am – 6:00 pm

Taubman Center, Floor 2, Reception H  
Phone: (734) 936-6781 Fax: (734) 764-3225  
Hours: Monday – Friday, 8:30 am – 3:30 pm

Taubman Center, Floor 3  
Phone: (734) 936-6760 Fax: (734) 936-7419  
Hours: Monday – Friday, 7:00 am – 6:00 pm

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UM Brighton Health Center
8001 Challis Rd.
Phone: (810) 494-2649 Fax: (810) 494-2645
Hours: Monday – Thursday, 7:00 am – 7:00 pm; Friday, 7:00 am – 5:00 pm; Saturday, 8:00 am – 12:00 noon

UM Canton Health Center
1051 North Canton Center Rd.
Phone: (734) 844-5280 Fax: (734) 844-5288
Hours: Monday – Thursday, 7:00 am – 7:30 pm; Friday, 7:00 am – 5:00 pm; Saturday, 8:00 am – 12:00 noon

UM Chelsea Health Center
14700 E. Old U.S. 12
Phone: (734) 475-4483 Fax: (734) 433-4246
Hours: Monday, Thursday, 7:30 am – 7:00 pm; Tuesday, Wednesday, Friday, 7:30 am – 5:30 pm; Saturday, 8:00 am – 12:00 noon

UM Livonia Health Center
20321 Farmington Rd.
Phone: (248) 615-6532 Fax: (248) 888-1390
Hours: Monday – Friday, 7:30 am – 5:00 pm; Saturday, 9:00 am – 1:00 pm

UM Saline Health Center
700 Woodland Dr. East
Phone: 734-429-2302 x 235 Fax: (734) 429-1156
Hours: Monday, Tuesday, 8:30 am – 4:00 pm; Wednesday - Friday, 8:00 am – 3:30 pm

UM Ypsilanti Health Center
200 Arnet St.
Phone: (734) 544-3277 Fax: (734) 544-3272
Hours: Monday – Friday, 8:00 am – 5:00 pm; Saturday, 8:00 am – 12:00 noon
What is UMHS Transplant Specialty Pharmacy Services

We are continually seeking opportunities to better serve our patients. We realize the challenges transplant patients face related to medication needs. To assist our patients we have created a University of Michigan Health System (UMHS) Transplant Specialty Pharmacy to serve transplant patients; ensuring they have ongoing and timely access to needed medications.

The UMHS Transplant Specialty Pharmacy is committed to providing transplant patients with exceptional customer service. Our experienced pharmacists are here to support you throughout the entire treatment process. The specialty pharmacy offers financial counseling and support services to assist patients in navigating through the complexities of insurance coverage and allows patients to obtain answers to questions regarding their medication regimen and medication side effects. UMHS Transplant Specialty Pharmacy coordinates the efforts of professionals from across the medical center, including the University of Michigan Transplant Center and the Department of Pharmacy, to provide these services.

Why Should I Use UMHS Transplant Specialty Pharmacy Services?

- We know you best! The UMHS Transplant Specialty Pharmacy is an extension of your U-M patient care team.
- You will receive personalized service from a dedicated pharmacy care team, comprised of a pharmacist, a pharmacy technician and a customer services representative assigned to you.
- You will have personalized access to pharmacists who specialize in transplant medications.
- You will have access to an on-call pharmacist 24 hours a day, 7 days a week.
- You will receive a Health and Wellness Kit containing educational material, a pill box, a tablet splitter, a blood pressure monitor and a thermometer provided at no charge to you.
- To ensure you don’t run out of your medications, you will receive automatic refill reminders.
- You will have access to financial and insurance coverage counseling focused on minimizing your out-of-pocket expense.
- The medications you need upon discharge will be delivered to you before you leave the hospital.
- You may have your ongoing medications delivered in unmarked shipping containers to any address you choose — your home, your office, your vacation location, or a physician’s office at no extra charge.

CONTACT US

Call 1-866-946-7695 for more info or to enroll with UMHS Transplant Specialty Pharmacy

4260 Plymouth Road, Ann Arbor
866-946-7695
734-232-3408 Fax
www.pharm.med.umich.edu/transplant_pharmacy
**Glossary of Terms**

**Aneurysm:** A ballooning of the wall of a vein or an artery or the heart itself due to weakening of the wall by disease, traumatic injury or an abnormality present at birth.

**Angiocardiography:** A diagnostic method of involving injection of dye into the bloodstream. Chest x-rays taken after the injection show the inside dimensions of the heart and great vessels, as outlined by the dye.

**Anoxia:** Literally, no oxygen. This condition most frequently occurs when the oxygen supply to a part of the body is critically diminished. This may result in the death of the affected tissue.

**Antiarrhythmic Drugs:** Drugs that are used to treat disorders of the heart rate and rhythm, such as lidocaine, procaine amide, quinidine, digitalis, propranolol, atropine and isoproterenol.

**Anticoagulant:** A drug that delays clotting (coagulation) of the blood. When given in cases where a blood vessel has been plugged by a clot, an anticoagulant tends to prevent new clots from forming, or the existing clots from enlarging, but does not dissolve an existing clot. Anticoagulants are also used to prevent clots from forming on artificial material, such as artificial valves.

**Aorta:** The main artery to the body, originating from the base of the heart, arching up over the heart like a cane handle, and passing down through the chest and abdomen near the spine. The aorta normally receives blood from the left ventricle of the heart and moves into the many lesser arteries that conduct blood to all parts of the body, except the lungs.

**Aortic Stenosis:** A narrowing at the valve opening, or just above or below the valve, between the left ventricle of the heart and the large artery called the aorta.

**Arrhythmia:** Any variation from the normal rhythm of the heartbeat.

**Arterial Blood:** Blood that picks up oxygen in the lungs and normally passes from the lungs to the left side of the heart via the pulmonary veins. This blood is then pumped by the left side of the heart into the arteries that carry it to all parts of the body.

**Artery:** Any blood vessel that carries blood away from the heart to the various parts of the body. Arteries usually carry oxygenated blood, except for the pulmonary artery, which carries un-oxygenated blood from the heart to the lungs, where it picks up oxygen.

**Asymptomatic:** Without symptoms, a person is considered asymptomatic when he does not exhibit functional evidence of a disease or condition.
**Atresia:** The absence of a normal opening.

**Atrial Septal Defect:** An opening in the wall, or septum, that normally divides the left and right upper heart chambers, called the atria.

**Atrium:** Sometimes referred to as the auricle. The atrium is one of the two upper chambers of the heart. The right atrium receives un-oxygenated blood from the body. The left atrium receives oxygenated blood from the lungs.

**Bacterial Endocarditis:** An inflammation of the inner layer of the heart caused by bacteria, sometimes resulting as a complication of another infectious disease, an operation or injury. The lining of the heart valves is most frequently affected, especially valves with previous damage from rheumatic disease or congenital abnormality.

**Balloon Angioplasty:** A technique accomplished during cardiac catheterization or surgery using a balloon tipped catheter inserted into a vessel, usually to dilate a narrowing or to open a blockage. This is a fairly new procedure.

**Bicuspid Valve:** Any valve with two leaflets. The term may refer to a normal mitral valve or an abnormal aortic or pulmonary valve, which normally has three leaflets.

**Blood Pressure:** The force that flowing blood exerts against the artery walls. Two blood pressures are usually measured: 1) The upper, or systolic, pressure occurs each time the heart contracts to pump blood into the aorta. This part of the heartbeat is called systole: and 2) The lower, or diastolic, pressure occurs when the heart relaxes and refills with blood. This part of the heartbeat is called diastole. The blood pressure is expressed by two numbers, with the upper one written over the lower one (systolic/diastolic).

**Blue Babies:** Babies having a blue color of skin, called cyanosis, caused by insufficient oxygen in the arterial blood. This often indicates a heart defect, but may have other causes, such as premature birth or impaired respiration.

**Bradydycardia:** An abnormally slow heart rate. Generally, anything below 60 beats per minute is considered bradycardia.

**Bundle of His:** Also called the atroventricular bundle of A-V bundle. This bundle of microscopic specialized fibers lies between the atria and ventricles and is the only known normal direct connection between the atria and the ventricles, serving to conduct impulses to the ventricular heart muscle. It is named after German anatomist Wilhelm His.

**Cardiac:** Pertaining to the heart. Sometimes refers to a person who has heart disease.
**Cardiac Arrest:** The cessation of the heartbeat. As a result, blood pressure drops abruptly and circulation of blood ceases.

**Cardiologist:** A specialist in the diagnosis and treatment of heart disease.

**Cardiology:** The study of the heart and its functions in health and disease.

**Cardiopulmonary Resuscitation (CPR):** An emergency measure used by one or two people to artificially maintain another person's breathing and circulation if these functions suddenly stop. CPR is done by keeping the airway open, performing rescue breathing and external cardiac compression, or heart massage, to keep oxygenated blood circulating through the vital organs of the body.

**Cardiovascular:** Pertaining to the heart and blood vessels.

**Carditis:** Inflammation of the heart.

**Catheter:** A thin, flexible tube that can be guided into body organs. A cardiac catheter is made of woven plastic, or other material to which blood will not adhere, and is inserted into a vein or artery, usually an arm or leg, and gently threaded into the heart. Its progress can be watched on a fluoroscope.

**Cineangiography:** A diagnostic method similar to angiography, except that instead of still x-ray pictures, motion pictures of the heart are made by fluoroscope as an injected opaque liquid is carried through the heart and blood vessels.

**Clubbed Fingers:** Fingers with a short broad tip and overhanging nail, somewhat resembling a drumstick. This condition is sometimes seen in children born with certain kinds of cyanotic heart defects and in adults with heart, lung or gastrointestinal diseases. It may also be hereditary and insignificant.

**Coarctation of the Aorta:** A congenital narrowing of the aorta, the main artery that conducts blood from the heart to the body.

**Congenital Anomaly:** An abnormality present at birth.

**Congenital Heart Defect:** Malformation of the heart or of its major blood vessels present at birth.
**Congestive Heart Failure:** Heart failure is a condition in which the heart is unable to pump the amount of needed blood to the body. This results from an anatomic or chemical abnormality that leads to congestion in the body and/or lung tissues. Congestive heart failure usually develops gradually over several years, although it can be acute (short and severe). It can be treated by drugs and/or, in some cases, by surgery.

**Coronary Arteries:** The two arteries that arise from the aorta, then arch down over the top of the heart and branch out to provide blood to the working heart muscle.

**Cyanosis:** Blueness of skin caused by insufficient oxygen in the blood. When hemoglobin is not carrying oxygen, it is dark burgundy and is called “reduced hemoglobin.” The blueness of the skin occurs when critical amounts of reduced hemoglobin are present.

**Dextrocardia:** Abnormal position of the heart within the chest. The heart normally is in the left chest. When dextrocardia is present, the heart is on the right side. This occurs frequently when a congenital heart defect is present.

**Diastolic Blood Pressure:** The blood pressure inside the arteries when the heart muscle is relaxed.

**Digoxin (Digitalis):** A drug that causes the heart muscle to pump more effectively, thereby improving the circulation of the blood, and promoting the normal elimination of excess fluid. This drug is often used to treat heart failure. It is also used to certain arrhythmias.

**Diuretic:** A medicine that promotes the excretion of urine. These drugs are often used to treat conditions involving excess body fluid, hypertension and congestive heart failure. One important class of diuretics is the thiazides.

**Ductus Arteriosus:** A connection outside the heart of a fetus between the pulmonary artery and body of the fetus. Normally this connection closes soon after birth. If it does not close, the condition is known as patent or open ductus arteriosus.

**Dysrhythmia (Arrhythmia):** An abnormal rhythm of the heart.

**Echocardiography:** A diagnostic method in which pulses of high-frequency sound, called ultrasound, are transmitted into the body and the echoes returning from the heart and other structures are made into an electronic picture. These pictures are then studied for diagnostic purposes.

**Echo:** A picture of the heart and vessels made by echocardiography.

**Edema:** Abnormally large amounts of fluid in the tissues of the body.
**Eisenmenger's Syndrome:** A condition in which a large congenital shunting defect is complicated by a pulmonary hypertension, or high blood pressure in the blood vessels of the lungs. A shunting defect is an abnormal opening between the heart chambers, called a septal defect, or between the great arteries, such as patent ductus arteriosus. Some oxygen-poor blood gets pumped to the body and results in cyanosis of the lips, fingernails and toenails.

**Electrocardiogram:** Often referred to as ECG or EKG. A graphic record of the electric currents generated by the heart. The word “electrocardiogram” most often refers to a resting electrocardiogram, that is, the patient is lying at rest while the recording is being made. The recording can also be made during exercise or when the patient is walking.

**Endocardial Cushion Defect:** A complex congenital heart malformation involving the septum, or wall, between the upper chambers of the heart, called the atria, and the septum, or wall, between the lower chambers of the heart, called the ventricles. The valves between the upper and lower chambers are also malformed.

**Endocarditis:** An inflammation of the inner lining of the heart or heart valves.

**Enlarged Heart:** A state in which the heart is larger than normal, most often related to birth defect or underlying disease. Rarely may represent a normal variant.

**Extra Beats/Skipped Beats:** Single or multiple irregular beats, or palpitations, usually felt as a skip or momentary cessation of the heartbeat.

**Fluoroscope:** An instrument for observing the internal body organs at work. X-rays are passed through the body onto a fluorescent screen, where the shadows of the beating heart and other organs can be seen and studied.

**Foramen Ovale:** A hole between the left and right upper chambers of the heart that normally closes after birth.

**Heart Attack:** The death of a portion of heart muscle, which may resulting in disability or death of the individual, depending on the extent of muscle damage. A heart attack occurs when an obstruction in one of the coronary arteries prevents an adequate oxygen supply to the heart. Symptoms may be none, mild or severe, and may include: chest pain, sometimes radiating to the shoulder; arm, neck or jaw; nausea; cold sweat, and shortness of breath or syncope (fainting).

**Heart Block:** A condition in which the electrical impulse that travels through the heart’s specialized conduction system to trigger the events of the heartbeat is slowed or blocked along its pathway. This can result in a dissociation of the rhythms of the upper and lower heart chambers, and is the major disorder for which artificial pacemakers are used.
**Heart Disease:** A general term used to mean ailments of the heart of blood vessels related to structure or function. May be present at birth (congenital) or developed after birth (functional).

**Heart Failure:** See Congestive Heart Failure.

**Heart-Lung Machine:** A special instrument used to provide circulation to the body during open-heart surgery.

**Heparin:** A type of anticoagulant that is given by injection.

**High Blood Pressure:** An unstable or persistent elevation of blood pressure above the normal range.

**Holter Monitoring:** A process by which the ECG can be tape recorded for 14 hours. The patient wears a small tape recorder connected to electrocardiographic leads placed on the chest for 24 hours. A written diary is kept during that period to record symptoms.

**Hypertension:** Commonly called high blood pressure. It is blood pressure above the normal range.

**Hypertrophy:** Enlargement of a tissue or organ due to increase in the size of its cells. This may result from a demand for increase work.

**Hypotension:** Blood pressure below the normal range. Most commonly used to describe an acute fall in blood pressure as occurs in shock syncope (fainting). It is often called low blood pressure.

**Hypoxia:** Less than normal content of oxygen in the organs and tissues of the body. At very high altitudes, healthy people experience hypoxia because of the decreased amount of oxygen in the air.

**Isoproterenol:** A drug that can be used as a cardiac stimulant to treat an abnormally slow heartbeat and to increase the strength of the heart’s pumping.

**Lanoxin:** See Digoxin.

**Mitral Valve:** The heart valve between the left atrium and left ventricle. It has two flaps, or cusps.
**Mitral Valve Insufficiency:** An incomplete closing of the mitral valve, which is situated between the upper and lower chambers on the left side of the heart. The mitral valve normally prevents a backflow, or leak, of blood in the wrong direction. Mitral valve insufficiency is sometimes the result of scar tissue that forms after rheumatic heart disease. It can also be caused by a congenital heart defect.

**Mitral Valve Stenosis:** A narrowing of the mitral valve situated between the upper and lower chambers on the left side of the heart. Sometimes the result of a congenital heart defect.

**Murmur:** Noise made by blood flow, which may or may not be abnormal.

**Open-Heart Surgery:** Surgery performed inside the heart with the aid of a heart-lung machine.

**Organic Heart Disease:** A structural abnormality of the heart or great vessels.

**Pacemaker:** A small mass of specialized cells in the right atrium of the heart, which gives rise to the electrical impulses that initiate contractions of the heart. This is also called the sinoatrial node, or SA node. Under certain circumstances (normal or abnormal), other cardiac tissues may assume the pacemaker role by initiating electrical impulses to stimulate contraction. The term “artificial pacemaker” is applied to an electrical device, which substitutes for a defective natural pacemaker to control the beating of the heart by a series of rhythmic electrical discharges. If the electrodes that deliver the discharges to the heart are placed on the outside of the chest, it is called an “external pacemaker.” If they are placed within the chest wall, it is called an “internal pacemaker.”

**Palpitations:** A single or multiple irregular beat usually felt as a skip or momentary cessation of the heartbeat.

**Patent Ductus Arteriosus:** A congenital heart defect in which a small duct, or tube, between the artery leaving the left side of the heart, the aorta, and the artery leaving the right side of the heart, the pulmonary artery, which normally closes soon after birth, remains open. As a result of its failure to close, blood from the left side of the heart is also pumped into the pulmonary artery and thereby into the lungs. This defect is sometimes called simply patent or open, ductus.

**Patent Foramen Ovale:** An oval hole, called the foramen ovale, between the left and right upper chambers of the heart, which normally closes shortly after birth, remains open.

**Pericarditis:** Inflammation of the membrane sac, the pericardium, which surrounds the heart.
Persistent Truncus Arteriosus: A congenital cardiac defect, characterized by a single arterial trunk arising from the heart receiving blood from both pumping chambers, the ventricles, and the pulmonary artery.

Prostaglandins: Hormone-like substances made from fatty acids, which are found throughout the body tissues. They are thought to have important roles in tissue metabolism and blood flow.

Pulmonary: Pertaining to the lungs.

Pulmonary Artery: The large artery that normally conveys un-oxygenated blood from the lower right chamber of the heart to the lungs. This is the only artery in the body which normally carries un-oxygenated blood; all others carrying oxygenated blood to the body.

Pulmonary Edema: Congestion of lung tissues often resulting from critical, congenital, or acquired heart or lung disease.

Pulmonary Hypertension: High blood pressure, or hypertension, in the blood vessels of the lungs. The most common causes are congenital heart defects.

Pulmonary Valve Stenosis: A congenital heart defect in which there is a narrowing of the pulmonary valve, which is situated between the right lower chamber; or the ventricle, and the pulmonary artery.

Pulmonic (Pulmonary) Valve: The heart valve between the right ventricle and pulmonary artery. It has three flaps, or cusps.

Radioisotopic Scanning: A diagnostic technique involving radioactive labeling or tissues and organs by the injection of radioisotopes (minimally radioactive material) into the bloodstream. The emitted radioactivity is detected by a scanner and the resulting record of the scan is used to evaluate structural defects or functions.

Regurgitation: The abnormal backward flowing of blood through a valve of the heart.

Rheumatic Heart Disease: A complication of rheumatic fever in which damage results to all layers of the heart, particularly the valves.

Rubella: Commonly known as German measles.

Septa: The muscular walls dividing the two chambers on the left side of the heart from the two chambers on the right. The atrial septum separates the top chambers and the ventricular septum separates the bottom chambers.
SBE: See Bacterial Endocarditis.

Shock: Collapse of the circulation related to a congenital heart defect or acquired heart disease or loss of blood volume.

Shunt: A passage between two blood vessels or between the two sides of the heart, as in cases where an opening exists in the wall that normally separates them. In surgery, a shunt is the operation of forming a passage between blood vessels to divert blood from one part of the body to another.

Sphygmomanometer: An instrument for measuring blood pressure in the arteries.

Stenosis: A narrowing or stricture of an opening. Mitral stenosis, aortic stenosis, etc. means that the valve indicated has become so narrowed that it does not function normally. Also refers to narrowing of a blood vessel.

Stress Test: A diagnostic method used to determine the body’s response to physical stress. Usually involves monitoring an EKG and other physiological parameters, such as breathing rate and blood pressure, while the patient is exercising – jogging on a treadmill, walking up and down a short set of stairs, or pedaling on a stationary bicycle.

Subvalvar: Below a valve.

Symptomatic: A person is considered symptomatic when he exhibits functional evidence of a disease or condition.

Systolic Blood Pressure: Pressure inside the arteries when the heart contracts with each beat.

Tachycardia: Abnormally fast heart rate. What is considered tachycardia varies with age.

Tetralogy of Fallot: A complex congenital heart malformation consisting of: 1) an opening in the wall between the lower heart chambers (ventricular septal defect), 2) a narrowing of the pulmonary valve (stenosis) and the muscular area just beneath it, 3) thickening (hypertrophy) of the right ventricle and 4) abnormal position of the great artery (aorta). These children are cyanotic.

Transplantation, Heart: The replacement of a healthy heart from a recently deceased donor into the chest of a person whose own heart can no longer function adequately. The donor’s heart then replaces the failing heart.
**Transposition of the Great Vessels:** A congenital heart defect in which the aorta arises from the right, rather than left, ventricle and the pulmonary artery arises from the left, rather than the right, ventricle. Thus the right heart pumps un-oxygenated blood from the body through the aorta and back to the body, and the left heart pumps oxygenated blood from the lungs back to the lungs. Only if there is a sizeable hole between the right and left chambers, called a septal defect, or a channel between the aorta and pulmonary artery, patent ductus arteriosus, will enough oxygenated blood get pumped to the body to sustain life. Babies with this condition are critically ill and cyanotic and require surgical correction in the first years of life.

**Tricuspid Atresia:** A severe congenital heart defect in which the valve between the upper right chamber; the atrium, and the lower right chamber; the ventricle, failed to form. Other associated defects are required for life to persist. These children are cyanotic.

**Tricuspid Valve:** The heart valve between the right atrium and right ventricle, comprised of three flaps or cusps.

**Ultrasound:** High frequency sound vibrations, not audible to the human ear. In a sonar-like application, ultrasound can be used by a cardiologist as a diagnostic tool, usually echocardiography.

**Valve:** An opening covered by membranous flaps between two chambers of the heart or between a chamber of the heart and a blood vessel. When it is closed, blood normally does not pass through.

**Valve Conduit:** An artificial tubing with an artificial valve used in some congenital heart surgeries.

**Valvular Insufficiency:** Valves that close improperly and permit a backflow of blood. Valvular insufficiency may result from either congenital or acquired heart disease.

**Vascular:** Pertaining to the blood vessels.

**Vectorcardiography:** A special type of EKG

**Vein:** Any one of a series of vessels of the vascular system, which carries blood from various parts of the body back to the heart.

**Venous Blood:** Refers to blood returning to the heart. It is un-oxygenated when returning from the body and oxygenated when returning from the lungs.
**Ventricle:** One of the two main pumping chambers of the heart. The left ventricle pumps oxygenated blood through the arteries to the body. The right ventricle pumps un-oxygenated blood through the pulmonary artery to the lungs. Capacity of each ventricle in an adult averages 85 cc. or about 3 ounces.

**Ventricular Septal Defect:** A congenital cardiac defect in which there is an abnormal opening in the wall, or septum, that divides the right and left lower heart chambers.
The Following Information is for Children Over 18 Years of Age
Durable Power of Attorney for Health Care (DPOA-HC)

CHOOSE A PATIENT ADVOCATE

I, ............................................................................................................................................................................ (print your name), living at ......................................................................................................................................................... , and being of sound mind, voluntarily choose a Patient Advocate to make care, custody, and medical treatment decisions for me. This durable power of attorney for health care is only effective when I am unable to make my own medical decisions. I understand I may change my mind at any time by communicating in any manner that this designation does not reflect my wishes.

I want the person named below to be my Patient Advocate and to be able to make medical decisions for me when I cannot make them myself. I have talked to my advocate(s) and have provided them with a copy of this directive.

PATIENT ADVOCATE

Name..............................................................................................................................................Relationship .................................

Address ...........................................................................City .........................................................State ..................Zip ...................

Telephone Number ........................................................................................................................................................................

If that person is not available, or cannot serve, I want this person to be my FIRST ALTERNATE PATIENT ADVOCATE.

Name...................................................................................................................................Relationship .............................................

Address ...........................................................................City .........................................................State ......................................

Telephone Number ........................................................................................................................................................................

If that person is not available, or cannot serve, I want this person to be my SECOND ALTERNATE PATIENT ADVOCATE.

Name...................................................................................................................................Relationship .............................................

Address ...........................................................................City .........................................................State ..................Zip ...................

Telephone Number ........................................................................................................................................................................

PROVIDERS: PLEASE RETAIN A COPY OF ALL PAGES FOR THE MEDICAL RECORD.
GUIDELINES WORKSHEET

Life Support

Some people want to decide what types of life support treatments and medicines they get from doctors to help them live longer when they are sick. Read through all six choices and initial the one that best fits what you want or do not want to happen if you are very sick.

I want doctors to do everything they think might help me. Even if I am very sick and I have little hope of getting better, I want them to keep me alive for as long as they can.

I want doctors to do everything they think might help me, but, if I am very sick and I have little hope of getting better, I do NOT want to stay on life support.

I want doctors to do everything they think might help me, but (initial all that apply):

I don't want doctors to restart my heart if it stops by using CPR.

I don't want a ventilator to pump air into my lungs if I cannot breathe on my own.

I don't want a dialysis machine to clean my blood if my kidneys stop working.

I don't want a feeding tube if I can't swallow.

I don't want a blood transfusion if I need blood.

I don't want any life support treatment.

I want my Patient Advocate to decide for me.

I am not sure.

Other ...............................................................................................................................................................................................................

What Makes Life Worth Living?

Think about what makes life worth living for you. For example, being able to talk to your loved ones, being able to take care of yourself, or being able to live without being hooked up to machines. Under what circumstances would you say life is NOT worth living? (initial all that apply)

If I will most likely not wake up from a coma.

If I can't take care of myself.

If I am in pain.

If I cannot live without being hooked up to machines.

I am not sure.

Other ...............................................................................................................................................................................................................

PROVIDERS: PLEASE RETAIN A COPY OF ALL PAGES FOR THE MEDICAL RECORD.
You must read and SIGN the following statement if you want to give your Patient Advocate the power to make medical decisions that might let you die when you are very sick:

I want my Patient Advocate named in this form to make decisions about life support and treatments that would allow me to die when I am very sick. When making those decisions, I want my Patient Advocate to follow the guidelines I have provided.

............................................................................................................................................................
Your Signature                                                                                        Date

POWER REGARDING MENTAL HEALTH TREATMENT (OPTIONAL)

I expressly authorize my Patient Advocate to make decisions concerning the following treatments if a physician and a mental health professional determine I cannot give informed consent for mental health care (check one or more consistent with your wishes):

- Outpatient therapy
- My admission as a formal voluntary patient to a hospital to receive inpatient mental health services. I have the right to give three days’ notice of my intent to leave the hospital.
- My admission to a hospital to receive inpatient mental health services
- Psychotropic medication
- Electro-convulsive therapy (ECT)
- I give up my right to have a revocation effective immediately. If I revoke my designation, the revocation is effective 30 days from the date I communicate my intent to revoke. Even if I choose this option, I still have the right to give three days’ notice of my intent to leave a hospital if I am a formal voluntary patient.

You must read and SIGN the following statement if you want to give your Patient Advocate the power to make decisions about your mental health care and treatment:

I want my Patient Advocate named in this form to make decisions about my mental health care and treatment. When making those decisions, I want my Patient Advocate to follow the guidelines I have provided.

............................................................................................................................................................
Your Signature                                                                                        Date

PROVIDERS: PLEASE RETAIN A COPY OF ALL PAGES FOR THE MEDICAL RECORD.
END OF LIFE PLANS

If you are dying, where would you like to be? At home? In the hospital? With only your family? With a religious or spiritual leader?
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What Happens to Your Body After Death?
You may choose to donate your organs. If you let your Patient Advocate donate your organs, he or she will be able to make that decision only after your death.
............. I want to donate ALL of my organs.
............. I want to donate ONLY THESE organs:
.........................................................................................................................................................................................................................
.........................................................................................................................................................................................................................
............. I do NOT want to donate any of my organs.
............. I want my Patient Advocate to decide.
............. I am not sure.

Religion
Some religions do not allow certain treatments or medicines. If there are treatments that you do not want to have because of your religion, please write them down here.
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Other Guidelines
Write down any other guidelines or thoughts you think might help you Patient Advocate or doctor decide what kind of health care you want.
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PROVIDERS: PLEASE RETAIN A COPY OF ALL PAGES FOR THE MEDICAL RECORD.
Liability
It is my intent that no one involved in my care shall be liable for honoring my wishes as expressed in this designation or for following the directions of my Patient Advocate. Photocopies of this form can be relied upon as though they were originals.

YOUR SIGNATURE

I want the people I selected in the “Choose a Patient Advocate” section to be my Patient Advocate and Alternate Patient Advocate(s). I understand that this will let them make medical decisions for me when I cannot. I am making this decision because this is what I want, NOT because anyone forced me to.

Your Signature ......................................................................................................................................Date .................................

PRINT your name................................................................................................................................................................................

Address...........................................................................City......................State .....................Zip.................................

STATEMENT REGARDING WITNESSES

I have chosen two adult witnesses who are not my spouse, parent, child, grandchild, brother or sister, and are not my presumptive heir or beneficiary at the time of witnessing. My witnesses are not my Patient Advocate(s). They are not my physician, or an employee of a health facility that is treating me; not an employee of my life or health insurance provider, or of a home for the aged where I reside, nor of a community mental health services program or hospital that is providing mental health services to me.

STATEMENT AND SIGNATURE OF WITNESSES

We sign below as witnesses. This Declaration was signed in our presence. The PERSON SIGNING APPEARS to be of sound mind, and to be making this designation voluntarily, without duress, fraud, or undue influence.

 Witness signature          Date          Witness signature          Date

PRINT Witness’s name

Witness’s telephone number

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DURABLE POWER OF ATTORNEY FOR HEALTH CARE

ACCEPTANCE BY PATIENT ADVOCATE

I, ............................................................................................................................................................. (insert Patient Advocate’s Name),
agree to be the Patient Advocate for .............................................................................................(insert Patient’s Name).

I accept the patient naming me Patient Advocate and I understand and agree to take reasonable steps to follow the desires and instructions of the patient. I also understand and agree that:

(A) **This designation is not effective unless** the patient is unable to participate in medical or mental health treatment decisions.

(B) **A Patient Advocate shall not exercise powers** concerning the patient’s care, custody, and medical or mental health treatment that the patient, if the patient were able to participate in the decision, could not have exercised on his or her own behalf.

(C) **A Patient Advocate CANNOT exercise powers for a pregnant patient** to withhold or withdraw treatment or make medical treatment decisions that would result in the pregnant patient’s death.

(D) **A Patient Advocate may make a decision to withhold or withdraw treatment** that would allow a patient to die only if the patient has expressed in a clear and convincing manner that the Patient Advocate is authorized to make such a decision, and that the patient acknowledges that such a decision could or would allow the patient’s death.

(E) **A Patient Advocate shall not receive compensation** for the performance of his or her authority, rights, and responsibilities, but a Patient Advocate may be reimbursed for actual and necessary expenses incurred in the performance of his or her authority, rights, and responsibilities.

(F) **A Patient Advocate shall act in accordance with the standards of care** applicable to fiduciaries when acting for the patient and shall act consistent with the patient’s best interests. The known desires of the patient expressed or evidenced while the patient is able to participate in medical or mental health treatment decisions are presumed to be in the patient’s best interests.

(G) **A patient may revoke his or her designation** at any time and in any manner sufficient to communicate an intent to revoke.

(H) **A patient may waive his or her right to revoke the designation** as to the power to make mental health treatment decisions and, if such a waiver is made, his or her ability to revoke as to certain treatment will be delayed for up to 30 days.

(I) **A Patient Advocate may revoke his or her acceptance** to the designation at any time and in any manner sufficient to communicate an intent to revoke.

(J) **A patient admitted to a health facility or agency has the rights** enumerated in Section 20201 of the Public Health Code, Act No. 368 of the Public Acts of 1978, being section 333.20201 of the Michigan Compiled Laws.

(K) **If the patient has designated the Patient Advocate to make an organ or body donation**, that authority will remain after the patient’s death.

...................................................................................................................................................................................................

Patient Advocate’s Signature                                                                                Date

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UNIVERSITY OF MICHIGAN
HOSPITALS & HEALTH CENTERS

Temporary Delegation Of Parental Rights
And Limited Power Of Attorney
For Consent To Medical Treatment Of Your Child

Name of Minor: ___________________________ Date of Birth: ___________ (mm/dd/yyyy)

Known Allergies/Drug Sensitivities: ___________________________

Known Medical Conditions: ___________________________

Any Limitations to Delegation: ___________________________

HMO/Insurance/Health Benefits and Physician Information:
Company/Government Program Name: ___________________________ Member I.D.: ___________________________
Minor’s Physician Name: ___________________________ Phone: ___________________________
Minor’s Dentist Name: ___________________________ Phone: ___________________________

I/we are the parent(s) or legal guardian(s) of the above named minor. We appoint (in order of appearance):
Name: ___________________________ Phone: ___________________________
Address: ___________________________
Name: ___________________________ DL or State ID #: ___________________________
Address: ___________________________

To act on my/our behalf to consent to: [ ] medical care [ ] dental care [ ] surgical care [ ] hospitalization for the above-named minor during period(s) of my/our absence from through (or until the 31st day following my return from deployment overseas, if I am an active duty member of the military). I understand this delegation includes receiving health information about the minor necessary to make health care decisions. **IN NO EVENT IS THIS DELEGATION OF PARENTAL RIGHTS EFFECTIVE FOR MORE THAN SIX (6) MONTHS FROM THE SIGNATURE DATE BELOW (OR LONGER, FOR UP TO 30 DAYS FOLLOWING RETURN FROM OVERSEAS DEPLOYMENT OF ACTIVE MILITARY PERSONNEL). THIS FORM DOES NOT DELEGATE POWER TO CONSENT TO MARRIAGE OR ADOPTION.**

This Delegation of Parental Powers is given under MCLA § 700.5103. I/we have signed and delivered this document on the date(s) listed below.

INSTRUCTIONS TO PARENT(S): At least one parent or legal guardian must sign this form below. The signature(s) should be witnessed by a person who is not an employee or contractor of the University of Michigan Health System and is not related by blood or marriage to the family, OR by a Notary Public.

Parent/ Guardian
Printed Name ___________________________ Signature ___________________________
Contact Phone(s) ___________________________ Date ___________________________

Parent/ Guardian
Printed Name ___________________________ Signature ___________________________
Contact Phone(s) ___________________________ Date ___________________________

CLINICAL STAFF: Please initial here after giving a copy of this signed form back to the parent or if the parent declines a copy: ___________________________ (initial)

OPTION 1:
Witness
Printed Name ___________________________ Signature ___________________________
Contact Phone(s) ___________________________ Date ___________________________

OPTION 2:

On this day, before me, the undersigned Notary Public, the parent(s)/guardian(s) herein named personally appeared and freely executed this document. He/she/they [ ] is/are personally known to me or [ ] has/have provided satisfactory evidence of their identity.

Notary Public ___________________________ Signature ___________________________
Date ___________________________

VER: A/11
HIM: 08/11

C.S. Mott Children’s Hospital Heart Transplant Guide

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Guide to and Instructions for Form:
Temporary Delegation of Parental Rights and Limited Power of Attorney
for Consent to Medical Treatment of Your Child

Are you planning a trip? Away for the day? Are your children in school?
If your child needs non-emergency medical, dental, or surgical services, whether in a doctor's office or in the hospital, you as a parent must give permission.

What about times when you cannot be reached for permission?
In an emergency, your child may be treated without your consent if a physician determines that your child needs immediate medical care and further delay would increase the risk to your child's life or health. In situations that are not emergencies, your child may need unexpected care. In these cases, contacting parents for permission can delay treatment and create unnecessary anxiety or discomfort for your child.

How can you prepare for the unexpected care your children might need when you are away?
- Make sure the person who is caring for your children knows how to reach you at all times.
- When you can't come with your children to medical appointments, or know you will be hard to reach, you may legally delegate your authority to give permission to other adults to authorize medical care for your children.

- A parent or guardian of a minor or a guardian of a legally incapacitated adult may delegate to another person, for up to 6 months, any of the parent's or guardian's powers regarding care, custody, or property of the minor child or ward, except the power to consent to marriage or adoption of a minor ward or to release of a minor ward for adoption.
- If a parent or guardian is serving in the armed forces of the United States and is deployed to a foreign nation, a delegation under this law may be effective longer than 6 months, until the thirty-first day after the end of the deployment, if the delegation letter specifically permits the longer period.
- The following applies only if a parent is not signing the form: if a legal guardian for a minor or legally incapacitated adult delegates any power under this law, the guardian must notify the court that approved the guardianship within 7 days and provide the court the name, address, and telephone number of the new "attorney-in-fact."

The form's purpose is to allow your child to receive necessary health care services when you, the parent or guardian, are unavailable to give written informed consent.
- Fill out this form carefully. With it, you may appoint relatives, friends, teachers, neighbors or anyone you know and trust who is legally competent and over 18 years of age to authorize treatment in your absence.
- After you complete the form, give it to the adults you have designated and explain its use. Make sure they know that they must take the form with them to the physician's or dentist's office, or to the hospital or other health care facility.
- The form will be entered into your child's medical chart so that it is available to other UMHHC providers and administrators with a need to know.

In order to be effective, the form must be signed by at least one parent and either a witness (not related to patient's family and not affiliated with UMHS) or a notary public. The following additional guidelines are suggested to help ensure the form is used appropriately.
- Print neatly to ensure that all information is legible. Use a blue or black ball point pen to ensure that information will not run, smear or smudge.
- Print the full name of the minor as written in the minor's birth certificate, insurance card and medical record.
- List all known allergies (e.g., medicines, insects, foods, etc.) and medical conditions (e.g., asthma, diabetes, etc.)
- Either initial or line-out "[ ] medical, [ ] dental, [ ] surgical care, and/or [ ] hospitalization..." as you deem appropriate.
- Print all limitations to the general delegation of parental powers to consent to medical, dental, surgical care, and/or hospitalization. Ensure that the limitations are clear and specific (e.g., necessary surgery ok but no cosmetic procedures).
- Note: It is essential that you trust the person you are appointing to make the decisions you would make under similar circumstances.
- Complete all blanks (e.g., if there are no known allergies, write "none"). Draw a line through any extra space at the end of each entry to ensure that nothing may be added at a later date.
- Have at least one (preferably both) parents sign the form and have a separate person - not the parent(s), not a relative, and not affiliated with UMHS - witness the signature.