



A firefighter who suffers extreme burns.
An infant with congenital heart disease.
A senior citizen experiencing kidney failure.
A parent suffering from Fuchs' Dystrophy, a blinding eye disease. What do each of these individuals have in common? The need for organ, eye or tissue donation.

The ability to donate an organ to save another person's life is among the most incredible medical advances in recent history. While today organ donation seems relatively commonplace, it was only in 1954 that the first human organ – of a kidney – was successfully transplanted.² This Policy Snapshot provides an overview of the nation's organ transplant system, describes organ availability versus need, and pinpoints examples of recent advances in transplantation.

Overview of the U.S. Organ Transplant System

While many people know an organ donor or recipient, numerous myths about donation persist, despite concerted public education campaigns. Perhaps most important to clarify is how organ recipients and donors are matched. The United States has in place strict standards and a national computer system that ensure that the process for distributing organs is ethical and fair. The federal government contracts with a private, nonprofit organization – United Network for Organ Sharing (UNOS) – to run the nation's organ transplant system.

When a patient needs an organ or tissue transplant, there are a number of critical factors that are considered. Key among them are matching blood and tissue types, the size of the organ, medical urgency, waiting time and geographic location.

Geography factors into organ allocation decisions because organs cannot be preserved indefinitely. While all organs have certain handling procedures that must be followed to keep them viable, the maximum time each type of organ can be preserved varies. Certain organs, such as the heart and lungs, have shorter time periods within which they can be recovered from a donor and transplanted into a recipient, whereas kidneys can be preserved for longer.²

Another key consideration in organ transplantation is the size of the organ. Having an organ that is the right size is a critical factor in how successful the transplant will be. For example, children typically respond best to an organ from another child.³

While there are clear, established criteria that guide organ decisions, there are also factors that are not considered in making organ donation decisions. A patient's race, gender, income, insurance status and celebrity status are not factored into decisions about who receives an organ.

When an organ becomes available, transplant candidates who are incompatible with the available organ – due to blood type incompatibility or other reasons – are removed by UNOS' computer system from consideration for the currently available organ. Conversely, for recipients who are compatible with the available organ, the computer system produces a "match run" that ranks the order in which recipients will be offered the organ.

Organ Procurement Organizations and Transplant Centers

Given that organs cannot be preserved indefinitely, and to help facilitate transplantation, the U.S. is divided into eleven geographic regions and 58 donor service areas. Each local area has an organ procurement organization (OPO). Under federal law, OPOs are the only organizations that can recover organs from deceased donors.

With a footprint that covers 80 hospitals in 20 counties, Lifebanc is the nonprofit organ, eye and tissue recovery organization that serves the Northeast Ohio region. Lifebanc provides lifesaving organs to the Northeast Ohio region's two transplant centers – Cleveland Clinic Transplant Center and the University Hospitals Transplant Institute – as well as tissue to many other hospitals in the region. Lifebanc also works closely with donor families and provides bereavement services that offer comfort, care and support. In addition, Lifebanc serves almost four million people by helping to educate healthcare professionals and the community about donation benefits.⁴



To learn more about organ, eye and tissue donation as well as ways you can partner with Lifebanc on their Community Champion program visit lifebanc.org.

Organ Availability Versus Need

There are currently 120,928 people in the U.S. waiting for a transplant, according to the most recent data from the United Network for Organ Sharing (UNOS).⁵ In the Buckeye state there are 3,349 people waiting for an organ transplant at one of Ohio's transplant centers. The greatest need, in terms of organs, is for kidneys which comprise almost 75 percent of needed organs in Ohio.⁶

kidney



24 - 36 hours

pancreas



12 - 18 hours

liver



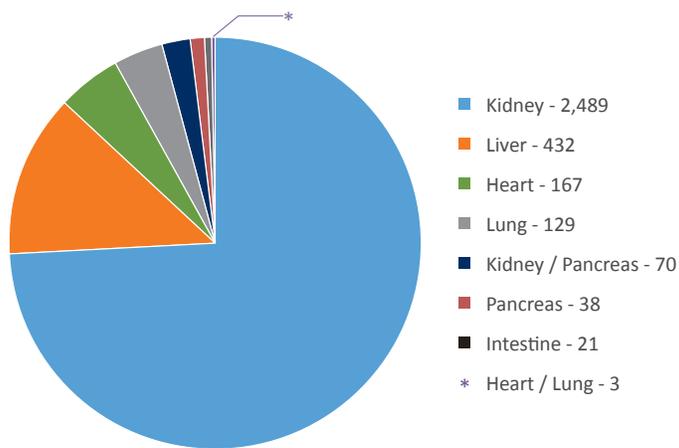
8 - 12 hours

heart / lung



4 - 6 hours

Ohio: Current Wait List for Organs



Source: Based on Organ Procurement and Transplantation Network data as of April 1, 2016.

While there is a long wait list for organs in Ohio and across the country, support for organ donation is high. Yet, despite the fact that 90 percent of Ohioans favor organ, eye and tissue donation, only 58 percent of Ohioans are registered donors. Sadly, 22 people die every day waiting for an organ.⁷

Who can donate organs?

- People of any age can donate many organs.
- Organ donation is possible even for individuals with many medical conditions.
- Healthy people can donate a kidney or part of the lung, liver, intestine, blood or bone marrow.

Ohioans who are unsure about their donation status can check the lower right corner of their Ohio driver's license to see if there is a heart, indicating that they are a donor.

Individuals who are not yet signed up to be a registered organ donor in Ohio can sign up by:

- [Registering online](#) with a valid Ohio driver license or state ID.
- Registering in-person at the Ohio Bureau of Motor Vehicles when receiving or renewing an Ohio driver license or state ID.
- Completing and mailing in an [Organ Donor Registry form](#).

Advances in Transplantation

For transplant candidates who receive a donated organ, there is always the possibility that the transplanted organ will be rejected by the recipient's body. Fortunately, medical advances in the prevention and treatment of organ rejection helped to drastically increase the number of successful transplants in the early 1980s.⁸

Today, a number of medical advances continue to expand transplantation possibilities. Uterus transplants have recently been performed in several countries around the world, with the first birth from a transplanted uterus occurring in September 2014. As part of a clinical trial, the Cleveland Clinic recently performed the first uterine transplant in the U.S. While the transplanted uterus did need to be removed because of an infection caused by an organism commonly found in a woman's reproductive system, this transplant helps to pave the way for future uterus transplants in the U.S.

In the future, three-dimensional (3D) printing, commonly referred to as bioprinting, may advance to the point where solid organs – such as kidneys and livers – can be produced, but this technology is likely decades away from being realized for complex organs.⁹ Bioprinting has been used to create medical devices, including hearing aids and dental implants, and certain tissues and organs, such as heart valves and artificial ears.¹⁰

Conclusion

In 2015 the number of organ transplants performed in the U.S. surpassed 30,000 for the first time annually, an increase of 4.9 percent from 2014. Of these, roughly 81 percent of transplants were from deceased donor organs and 19 percent were from living donors.¹¹ Increasing the number of registered organ donors will continue to be of vital importance to ensure sufficient organs are available to meet the demand.

30,000

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Cleveland will be helping to raise awareness about the need for organ, eye and tissue donors when it plays host to the [Donate Life Transplant Games of America](#) from June 10 through June 15. This biennial, multi-sport festival event allows donor recipients and living donors to compete while raising awareness about the need for organ, eye and tissue donations. To learn more visit transplantgamesofamerica.org.

Endnotes

¹ United Network for Organ Sharing. "History." <https://www.unos.org/transplantation/history/>

² United Network for Organ Sharing. "How Organs are Matched." <https://www.unos.org/transplantation/matching-organs/>

³ Ibid.

⁴ Lifebanc. "About Us." <https://www.lifebanc.org/contact-us/about.html>

⁵ United Network for Organ Sharing. Data from April 21, 2016. <https://www.unos.org/>

⁶ Based on Organ Procurement and Transplantation Network data as of April 1, 2016.

⁷ Ibid.

⁸ United Network for Organ Sharing. "History." <https://www.unos.org/transplantation/history/>

⁹ Cooper-White. "How 3D Printing Could End the Deadly Shortage of Donor Organs." *The Huffington Post*. March 2, 2015. http://www.huffingtonpost.com/2015/03/01/3d-printed-organs-regenerative-medicine_n_6698606.html

¹⁰ Ventola, C. L. "Medical Applications for 3D Printing: Current and Projected Uses." *Pharmacy and Therapeutics*. October 2014, 39(10). <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4189697/>

¹¹ Based on Organ Procurement and Transplantation Network data as of January 12, 2016. <https://optn.transplant.hrsa.gov/news/more-than-30-000-transplants-performed-annually-for-first-time-in-united-states/>