

Physician describes three advances leading to more lifesaving organ transplants

April 5 2023, by ByHeather Carlson Kehren



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All too often, people waiting for lifesaving organ transplants cannot get them. One of the biggest challenges is the lack of viable donated organs. Promising medical advances are opening the doors to more transplants

and saving more lives, says Mauricio Villavicencio, M.D., surgical director of heart and lung transplantation at Mayo Clinic in Rochester.

There are 104,000 people on the waiting list in the U.S. for a transplant. An estimated 17 people die on the waiting list every day, according to Donate Life America.

"Heart failure is an epidemic in the U.S. and around the world. A [heart transplant](#) is the gold standard for treating advanced [heart failure](#). But the number of people who die on the waiting list remains high. By taking advantage of these medical advances, we hope to change that," Dr. Villavicencio says.

April is National Donate Life Month. For the 12th consecutive year, deceased donations hit a record in the U.S. in 2022, according to the United Network for Organ Sharing. Here are three ways the organ donation pool is being expanded to help save more lives:

1. More donations after circulatory death

Traditionally, [organ donation](#) has primarily come from donors who die from brain death while their hearts are still beating. Increasingly, more donated organs are coming from donors who die after their heart has stopped beating. In the past, hearts and lungs from such deaths usually went unused. Medical advances now allow transplant experts to use these organs. Transplant experts can resuscitate the heart on a heart-lung bypass machine or in an out-of-the-body perfusion device to become a donor. Approximately 20% to 30% of all organ donations come from such donors.

2. Organ perfusion systems

The creation of organ perfusion systems, [mechanical devices](#) that help organs remain viable outside the body, has changed [organ transplants](#). One example: "heart in a box" technology, a portable device that resuscitates a stopped heart and keeps it beating until it can be transplanted.

"Heart in a box allows for long-distance heart transplantation. When a heart is placed in cold storage, it must be transplanted within four hours. Heart in a box doubles that time at least to eight hours," Dr. Villavicencio says.

A similar organ perfusion system available for lungs is called ex vivo lung [perfusion](#). It preserves the donated lung in a machine outside the body. Lungs can also be restored to a condition suitable for transplant.

3. Organs from hepatitis C-positive donors

Organs from hepatitis C-positive donors now can safely be transplanted to patients on the waiting list. This change is possible thanks to a new generation of highly effective antiviral medications. After the organs are transplanted, patients begin antiviral treatment that typically eliminates the virus from the body in seven days, Dr. Villavicencio says. In the past, these potential [donor](#) organs would have been wasted.

Provided by Mayo Clinic

Citation: Physician describes three advances leading to more lifesaving organ transplants (2023, April 5) retrieved 5 May 2024 from <https://medicalxpress.com/news/2023-04-physician-advances-lifesaving-transplants.html>

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