

Steep decline in organ transplants amid COVID-19 outbreak

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France and the United States, two countries hit hard by the novel coronavirus, have experienced a tremendous reduction in the number of organ donations and solid organ (kidney, liver, heart, and lung) transplant procedures since the onset of the COVID-19 pandemic, according to a new study. By early April, transplant centers in both countries were

conducting far fewer deceased donor transplants compared to just one month earlier, with the number of procedures dropping by 91 percent in France and 50 percent in the United States.

The international team of transplant scientists, including experts from the Perelman School of Medicine at the University of Pennsylvania and Paris Transplant Group, attribute much of the overall decline to a steep reduction in the number of kidney transplants specifically. However, they also reported a substantial drop in the number of heart, lung and [liver transplants](#). The analysis was published today in *The Lancet*.

"Our findings point to the far-reaching and severe ripple effects of the COVID-19 outbreak on [health care](#), including life-saving organ transplants," said study co-author Peter Reese, MD, MSCE, an associate professor of Medicine and Epidemiology at Penn. "Organs from deceased donors represent a time-limited opportunity, as they must be procured and used rapidly. However, in order to protect the safety of their patients, centers must now carefully vet all donors to ensure there is minimal risk of COVID-19."

The steep reduction in organ donations and transplant procedures exacerbates the worldwide shortage of transplantable organs and need for transplants. In the United States, there are more than 112,000 people on the national transplant waiting list. While the number of living donor kidney and liver transplants continues to increase, the vast majority of organ transplant procedures involve organs from deceased donors. Of the nearly 40,000 transplants performed in the United States in 2019, more than 32,000 involved organs from deceased donors.

Many [transplant centers](#), including the Penn Transplant Institute (PTI), continue to perform many life-saving organ transplants during the pandemic, but the outbreak has posed unique challenges for both organ procurement and transplantation. A number of centers nationwide,

including the PTI, are not using organs from deceased donors with evidence of recent infection or exposure.

To quantify the impact of the COVID-19 outbreak on organ donation and transplantation, investigators analyzed validated national data from three [federal agencies](#), including the United Network for Organ Sharing (UNOS), to study trends in France and the United States.

The team observed a strong link between the surge of COVID-19 infections and significant decline in donated organs and overall solid organ transplants. In the United States, the number of recovered organs dropped from more than 110 a day on March 6 to fewer than 60 per day on April 5, investigators found. During the same timeframe, the number of transplanted kidneys dropped from nearly 65 a day to about 35 per day. Researchers also observed that regions with fewer COVID-19 cases, or limited exposure to the disease, also experienced a significant reduction in transplant rates—suggesting a global and nationwide effect beyond the local infection prevalence.

The investigators hypothesize that France may have experienced a larger drop in transplants because of a coordinated national effort to reduce clinical and commercial activity. Whereas, in the United States, individual states had discretion to impose restrictions and hospital practice may have varied to a greater degree.

"These international comparisons of transplant activity will be very important as the COVID-19 pandemic evolves," said co-author Alexandre Loupy, MD, Ph.D., a nephrologist at the Department of Nephrology and Kidney Transplantation at Necker Hospital in Paris and Head of the Paris Transplant Group. "Some transplant systems may develop best practices to support organ procurement and transplant that can be shared across borders. We have a lot of work ahead to restore our invaluable infrastructure of donation and transplant surgery."

The team suggests these findings could be useful for public health agencies, professional societies and patient advocacy organizations in their planning and risk mitigation. Researchers also say that specific mapping of local trends in organ donation and [transplant](#) activity will enable public health leaders to identify areas where the number of donations and transplants continues to remain lower than normal.

Provided by Perelman School of Medicine at the University of Pennsylvania

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