

Giving HOPE: US has nearly 400 HIV-positive potential organ donors

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In the first-of-its-kind study since the passage of the HIV Organ Policy Equity Act (the HOPE Act), which lifted the ban on organ donations from one HIV-positive person to another, Penn Medicine researchers report on the quality of these organs and how their use might impact the country's organ shortage. The study, published online ahead of print May 14 in the *American Journal of Transplantation*, revealed that there are nearly 400 HIV-positive potential organ donors who could be sources of donated organs annually for HIV-positive patients waiting for organ donations.

"The findings are significant because there are not enough organ donors in the United States to meet the needs of all of the patients who might benefit from life-saving organ transplants," said the study's senior author, Emily Blumberg, MD, a professor in the division of Infectious Diseases at the Perelman School of Medicine at the University of Pennsylvania. "Some of the patients waiting for organs are infected with HIV but never make it to transplant because they either die while waiting or become too sick to be transplanted. HIV patients who undergo transplantation generally do well, so it is important to continue to look for ways to improve access to transplantation for them."

In addition, she noted, increasing the number of HIV-positive donors could help all patients on the list simply by expanding donor options for the HIV patients already on the list who are waiting for organs. It remains illegal to transplant organs from HIV-positive donors to HIV-negative recipients because of the likely transmission of HIV.

The Penn researchers and their colleagues arrived at their estimate by reviewing the records of 578 HIV-positive patients who died at six large Philadelphia HIV clinics to determine their potential suitability as deceased donors.

Their mean age was 53 years, 68 percent were male, and 73 percent were African American. Using standard criteria for donor selection, they estimated that of this original pool there were four to five potential donors annually in the Philadelphia area who might be a source of two to three kidneys and four to five livers. They arrived at their figure of nearly 400 potential organ donors annually in the United States by extrapolating their Philadelphia results.

"Unfortunately, the standard measurements of organ quality that we used suggest that many of the donor kidneys may be of reduced quality with decreased viability over the long term when compared with ideal donor kidneys," said the study's lead author, Aaron Richterman, a fourth-year medical student in the Perelman School of Medicine.

Specifically, using the Kidney Donor Risk Index, the researchers projected an increased risk of graft failure in kidneys from the potential donors (possibly as high as 50 percent), with estimated three-year graft survivals of 70 percent vs. 83 percent for the median transplanted kidney in 2013. But using the Liver Donor Risk Index, they projected a 71 percent chance of three-year graft survival, a figure only slightly below the 73.5 percentage associated with non-HIV-positive donors. Factors contributing to reduced kidney or liver quality were older age of potential donors, African-American race, and high rates of hypertension and diabetes.

"The kidney findings may reflect our greater success in treating HIV-infected individuals, who now live longer and thus are more likely to develop problems associated with poorer kidney transplant quality," said

Richterman.

The current U.S. waiting list for organ transplants is approximately 123,000 people, but only 11,844 people received organ transplants from January through May of 2014.

Philadelphia's transplant waiting list includes about 80 to 100 people with HIV, estimates Blumberg. "The two to three kidneys and three to four livers from HIV-positive donors that might be available yearly would have a small but important impact on that list," she said.

To date, no known [organ transplants](#) from HIV-positive donors to HIV-positive patients have occurred in the U.S. despite enactment of the HOPE Act.

"The National Institutes of Health are writing guidelines to oversee implementation of the HOPE Act, so we expect to see the first transplants occur sometime thereafter," said Richterman.

In South Africa, which for some U.S. legislators and policy advocates was the impetus for the HOPE Act, HIV-infected individuals have been a growing source of organs for HIV patients in need of kidney transplantation. For example, surgeons at a single South African center have transplanted 29 kidneys from HIV-positive donors to HIV-positive recipients; five-year patient survival stands at 74 percent.

"Our goal is to continue to improve access to transplantation for all patients, including patients with HIV," Blumberg said. "Because HIV patients may benefit from expanding the donor pool to include HIV-positive organ donors, it is important to understand how to optimally use this new source of transplant organs."

The findings suggest that it will be important to explore parameters

related to long-term organ viability when assessing the potential impact of using HIV-infected organ donors for HIV-infected patients.

Standard donor quality indices must be incorporated into future research in order to ensure that the use of HIV-positive [organ donors](#) is a safe, cost-effective way to decrease waiting times and provide greater access to transplantation for [patients](#) with end-stage organ diseases who are also infected with HIV, the authors said.

More information: "An Assessment of HIV-Infected Patients Dying in Care for Deceased Organ Donation in a United States Urban Center." Aaron Richterman, Deirdre Sawinski, Peter P. Reese, Dong H. Lee, Heather Clauss, Richard D. Hasz, Arwin Thomasson, David Goldberg, Peter L. Abt, Kimberly A. Forde, Roy D. Bloom, Stacey Doll, Kathleen A. Brady, and Emily Blumberg. *American Journal of Transplantation*; Published Online: May 14, 2015 (DOI: 10.1111/ajt.13308).

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