

Racial disparities in kidney transplantation rates eased by new allocation system

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Year-old changes to the system that distributes deceased donor kidneys nationwide have significantly boosted transplantation rates for black and Hispanic patients on waiting lists, reducing racial disparities inherent in the previous allocation formula used for decades, according to results of research led by a Johns Hopkins transplant surgeon.

The research, described online in December in the *Journal of the American Society of Nephrology*, also showed other "winners and losers" in the new system. Younger adults gained wider access to these coveted organs, compared to those who are still "overrepresented" on recipient lists—those over 50 and those whose immune systems more readily tend to reject donor organs.

The investigators also emphasized that the changes did nothing to increase the number of minorities on the transplantation waiting lists. "The new allocation policy only addresses the population of [patients](#) on the waiting list," says Dorry L. Segev, M.D., Ph.D., associate professor of surgery at the Johns Hopkins University School of Medicine. "There are still profound disparities for non-Caucasian candidates getting into the system in the first place," he adds.

On Dec. 4, 2014, the United Network for Organ Sharing (UNOS), which sets nationwide rules on how donor organs are allocated, changed the rules for prioritizing who gets deceased donor kidneys. The old algorithm was largely a "first come, first served" system, based on how long patients were on the waiting list, with some exceptions that moved

patients up or down in the queue. A major change under the new algorithm was to give more weight to time spent on dialysis rather than time spent on the waiting list. This change, says Segev, was largely meant to increase transplant access to minorities, who often aren't placed on the waiting list in a timely manner after beginning dialysis.

In their study, Segev and his colleagues compared transplant rates and other data from nearly two years before the new rules were in place to nearly 10 months afterward. During this short time, he says, transplant rates for deceased donor kidney recipients jumped 19 percent for blacks and 13 percent for Hispanics. Among 20,692 transplants performed in the 23 months prior to the new allocation system, black patients received 6,566 (31.7 percent) and Hispanic patients received 3,505 (16.9 percent). Among 8,481 transplants performed in the 10 months after the new allocation system, black patients received 3,156 (37.2 percent) and Hispanic patients received 1,561 (18.4 percent).

Other groups benefiting from the new rules are adults between the ages of 18 and 50. Under the old "first come, first served" rule, Segev explains, [donor organs](#) predicted to last for many years were often transplanted into patients who weren't expected to live as long, and organs predicted to have a short life span were often transplanted into patients expected to live a long time. The study shows that under the new rules, which match organs and patients partly on likely longevity, the transplantation rate increased by 47 percent for candidates ages 18 to 40 and by 17 percent for candidates ages 41 to 50.

Conversely, the new rules disfavored older candidates. The transplantation rate declined by 7 percent for those between 51 and 60, by 10 percent for those between 61 and 70, and 24 percent for those older than 70.

The major winners in the new algorithm were patients with elevated

levels of certain "reactive" antibodies, a measure of immune system sensitivity designed to predict what proportion of deceased donor kidneys from a general population are likely to be accepted or rejected by those patients.

The study showed that the proportion of very highly sensitized patients—who can accept organs from less than 1 percent of the population—initially spiked from 2 percent of those receiving deceased donor kidney transplants in the old system to about 12 percent soon after the new rules were implemented, then fell by August 2015 to 7 percent. That percentage, which represented 61 of 857 transplants that month, still unfairly "overrepresents" such patients in the total candidate pool, Segev says.

Thus, Segev adds, although the new rules fix some of the problems researchers have highlighted from the old algorithm, many issues still need to be addressed before the system is fair and can lead to the best outcomes for patients, particularly minorities.

According to the Organ Procurement and Transplant Network, run by UNOS, more than 100,000 patients in the United States are currently on the kidney transplant [waiting list](#), and an additional 3,000 are added each month. About 12 people die each day waiting for a donor kidney.

Provided by Johns Hopkins University School of Medicine

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