

# Heart transplants: Do more or do none, study suggests

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Heart surgeons at Johns Hopkins have evidence to support further tightening rather than easing of standards used to designate hospitals that are best at performing heart transplants.

In a study to be presented Jan. 29 at the 44th annual meeting of the Society of Thoracic Surgeons in Fort Lauderdale, Fla., the Hopkins team recommends that the benchmark for designation as a high-volume hospital rise from 10 heart transplants per year to 14. High-volume centers consistently show higher survival and fewer complication rates.

However, the standard, which is officially set by the U.S. Centers for Medicare and Medicaid Services and which qualifies medical centers for federal reimbursement, was recently lowered from 12 per year to 10.

“The bar for patient safety, quality of care and survival needs to be set pretty high,” says senior study investigator and cardiac surgeon John Conte, M.D. “Our national health care system has to rethink which hospitals should do heart transplants, and in consultation with their physicians, patients need to evaluate these surgical volumes to see for themselves which hospitals have teams operating at their peak skill level.”

Conte and his team reviewed the patient records of 14,401 men and women who received a heart transplant in the United States between 1999 and 2006.

The study is believed to be the largest and most thorough review of survival rates after heart transplantation in hospitals, based on volume.

“Our results clearly demonstrate that current standards have been arbitrarily set too low,” says Conte, who is director of heart and lung transplantation at The Johns Hopkins Hospital.

“There is a certain threshold, a minimum number of surgeries needed to maintain the expertise of the entire transplant team,” he says, noting that a dozen or more highly specialized professionals are involved in each transplant case, including cardiac surgeons, cardiologists, anesthesiologists, transplant coordinators, intensive care nurses, immunologists, pathologists, pulmonologists, and technicians.

In the new study, researchers found that death rates one month and one year after transplant increased steadily at hospitals that performed fewer than 14 heart transplants per year, which was the case for a majority of the 143 U.S. medical centers licensed to perform them. Roughly a dozen institutions perform more than 20 cases annually - including The Johns Hopkins Hospital and the University of Maryland Medical Center - and fewer than 10 hospitals do more than 30 procedures, with no more than five sites performing more than 40.

Study results showed that the overall average death rate one year after surgery was 12.6 percent. However, patients had a 16 percent greater chance of dying in a hospital that performed fewer than five heart transplants per year and had the best chances of surviving, with a 30-day mortality rate of less than 1 percent, at a hospital that performed over 40 procedures per year. Patients at hospitals with volumes of less than 10 had an 80 percent greater chance of dying within a month.

Using a graph and statistical analysis, researchers showed that death rates flattened for the majority of patients in hospitals with heart transplant

volumes at 14 or more per year.

Conte, an associate professor of surgery at The Johns Hopkins University School of Medicine and its Heart Institute, says heart-failure patients on transplant wait lists should consult with their cardiologists about hospital and surgeon volumes when making decisions about transplants.

Hopkins cardiologist and study co-investigator Stuart Russell, M.D., who has personally cared for more than 360 transplant patients in the past decade, says patients should also look for consistently high volumes over several years as well as overall survival rates for transplant programs.

One-year survival rates at The Johns Hopkins Hospital, he notes, consistently average above 90 percent.

Despite the team's findings, Russell says it will take a clear shift in public health policy to move American medicine toward further concentration of volumes for complex procedures such as heart transplantation.

In the United Kingdom, he points out, centers designated to performed heart transplants are severely restricted, and volumes soar past 50 for each center.

"In the United States, too many low-volume hospitals have a program that they won't let go of, no matter how poor the results," says Russell, an associate professor at Hopkins.

More than 2,000 people undergo heart transplants each year in the United States. Nearly 3,000 remain on wait lists, and up to 20 percent of those on the list to receive a heart will die while waiting. Costs for a heart transplant often run as high as \$260,000.

Source: Johns Hopkins Medical Institutions

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