

# Study finds wide variation in 5-year patient survival rates for lung transplantation centers

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There is significant variation among lung transplant centers in the U.S. in the 5-year survival rate of patients, with a higher number of procedures performed at a center only partly associated with longer survival of patients, according to a study in the July 7 issue of *JAMA*.

There are approximately 1,500 lung transplantations (LT) performed annually at 61 LT centers currently active in the United States.

"Although LT provides the only option for improved survival for patients with many end-stage lung diseases, the complexity of this intervention—both in terms of perioperative [around the time of surgery] approach and in long-term care— suggests that the center where the patient undergoes LT might influence outcome," the authors write.

"Although case loads vary substantially among U.S. lung transplant centers, the impact of center effects on patient outcomes following [lung transplantation](#) is unknown."

Gabriel Thabut, M.D., Ph.D., of the Mayo Clinic College of Medicine, Rochester, Minn., and colleagues conducted a study to assess the amount of variability in long-term survival among centers performing LT in the United States, and to examine the potential reasons for this variability. The study included an analysis of data from the United Network for Organ Sharing registry for 15,642 adult patients undergoing lung transplantation between 1987 and 2009 in 61 U.S. transplantation centers still active in 2008. Nineteen centers (31.1 percent) performed between

1 and 10 lung transplantations; 18 centers (29.5 percent), from 11 to 25 transplantations; 20 centers (32.8 percent), from 26 to 50 transplantations; and 4 centers (6.6 percent), more than 50 transplantations.

Median (midpoint) survival for the patients was 4.9 years. One-month and 1-, 3-, and 5-year [survival rates](#) were 93.4 percent, 79.7 percent, 63.0 percent, and 49.5 percent, respectively. "Characteristics of donors, recipients, and surgical techniques varied substantially among centers," the authors write. After adjustment for these factors, marked variability remained among centers, with risks of death ranging from 30 percent lower to about 70 percent higher for low- vs. high-risk centers, for 5-year survival rates of 30.0 percent to 61.1 percent.

"Higher lung transplantation volumes were associated with improved long-term survival and accounted for 15 percent of among-center variability; however, variability in center performance remained significant after controlling for procedural volume," the researchers write. They also found that several low-volume centers achieved good outcomes, suggesting that volume alone does not determine performance.

"This study of all LTs performed in the United States reveals clinically and statistically significant variability among centers in survival after transplantation. Thus, the center where a patient undergoes LT may be a major determinant of survival rate. The observation that this variability among centers remains after controlling for differences in the selection of donors, recipients, or surgical approaches suggests that centers may exhibit true differences in the quality of care provided during or following transplantation."

"There is a great need to explore practices at high-performing centers with the goal of exporting beneficial practices to lower-performing

centers. If such efforts do not equalize outcomes for [lung transplant](#) recipients, consideration might be given to further regionalizing the LT system in the United States," the authors conclude.

**More information:** *JAMA*. 2010;304[1]:53-60.

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