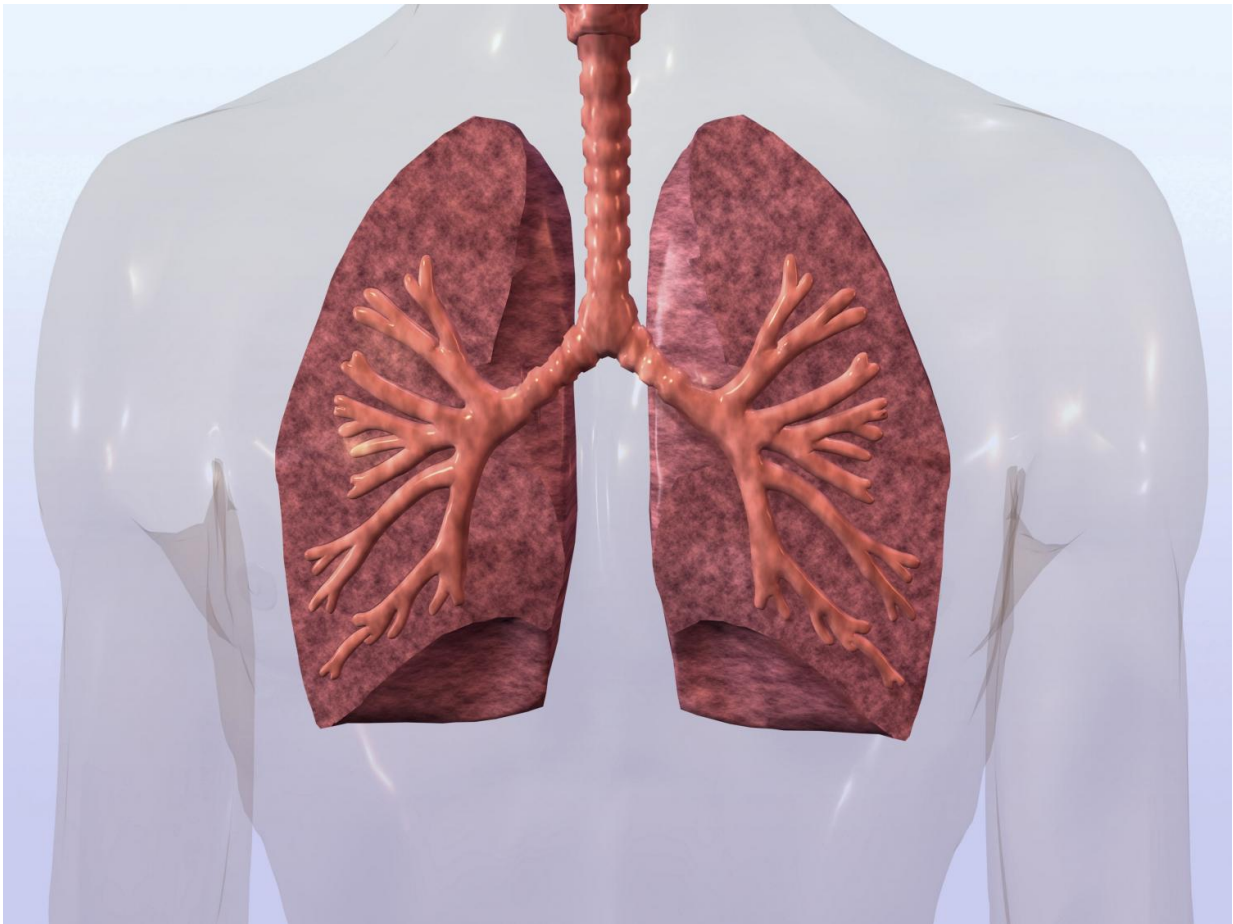


High-volume lung transplant centers have lower costs and readmissions

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For patients with lung disease, a transplant is a life-saving intervention. Credit: ATS

High-volume lung transplant centers have lower transplantation costs and their patients are less likely to be readmitted within 30 days of leaving the hospital following surgery, according to a new study of more than 3,000 Medicare patients who received lung transplants.

"The Effect of Transplant Center Volume on Cost and Readmission in Medicare Lung Transplant Recipients" was published online ahead of print in the *Annals of the American Thoracic Society*.

Previous research established that patient survival is higher at high-volume lung transplant centers. It is unknown, however, whether these better outcomes require more resources or result from better care delivery that might require fewer resources.

"Lung transplantation is a life-saving, resource-intensive intervention for patients with end-stage lung disease," said Joshua Mooney, MD, instructor of medicine at Stanford and lead author. "The impetus of this study was to better characterize resource use, which is rising, by focusing on how the number of transplants performed within a center influences cost and early hospital readmissions."

Researchers reviewed the records of 3,115 Medicare patients who received a lung transplant between 2005 and 2011. They grouped centers into three categories based on number of [lung transplants](#) performed each year: high, 35 or more; intermediate, 20-34; and low, less than 20. They defined early hospital readmission as occurring within 30 days of discharge following transplantation. The analyses were adjusted for pre-transplant severity of illness and regional price variation.

Researchers found:

- Lung transplantation cost at low-volume centers was 11.6 percent higher than high-volume centers. The average cost of lung

transplantation across all centers was \$135,622.

- Across all centers, 39 percent of recipients had an early hospital readmission, with an average cost of \$27,233. Recipients at low-volume centers were 14 percent more likely to have an early readmission than recipients at a high-volume center.
- There was no significant difference in either transplantation cost or in early readmissions between high- and intermediate-volume centers.
- With greater lung transplant volume, median intensive care unit length of stay was significantly reduced: low-volume centers, 14 days; intermediate, 11 days; and high, 10 days.

The study also confirmed the findings of earlier studies of [lung transplantation](#) center volume and mortality. After adjusting for illness severity, patients at low-volume centers were 41 percent more likely to die in the hospital than lung transplant patients at high-volume centers. There was no mortality difference between high-volume and intermediate-volume centers.

The authors wrote that the links between lung transplant volume, costs and early readmission are not clear from their study. It may be that patients at high-volume centers experience fewer complications. Or it may be that, as some studies indicate, complications rates are similar, but high-volume centers recognize complications sooner and address them better.

The authors suggested a number of ways their findings could change lung transplant delivery. They cautioned against "transplant regionalization based upon a volume threshold." Such an approach they argue could reduce access, overburden already busy centers and threaten their high-value care and penalize low-volume centers that do provide high-value care.

Dr. Mooney said research is needed to identify center practices that improve lung transplant value and can be shared across all transplant centers.

The study was limited to Medicare fee-for-service patients; findings may not be generalizable to all lung [transplant patients](#).

Provided by American Thoracic Society

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