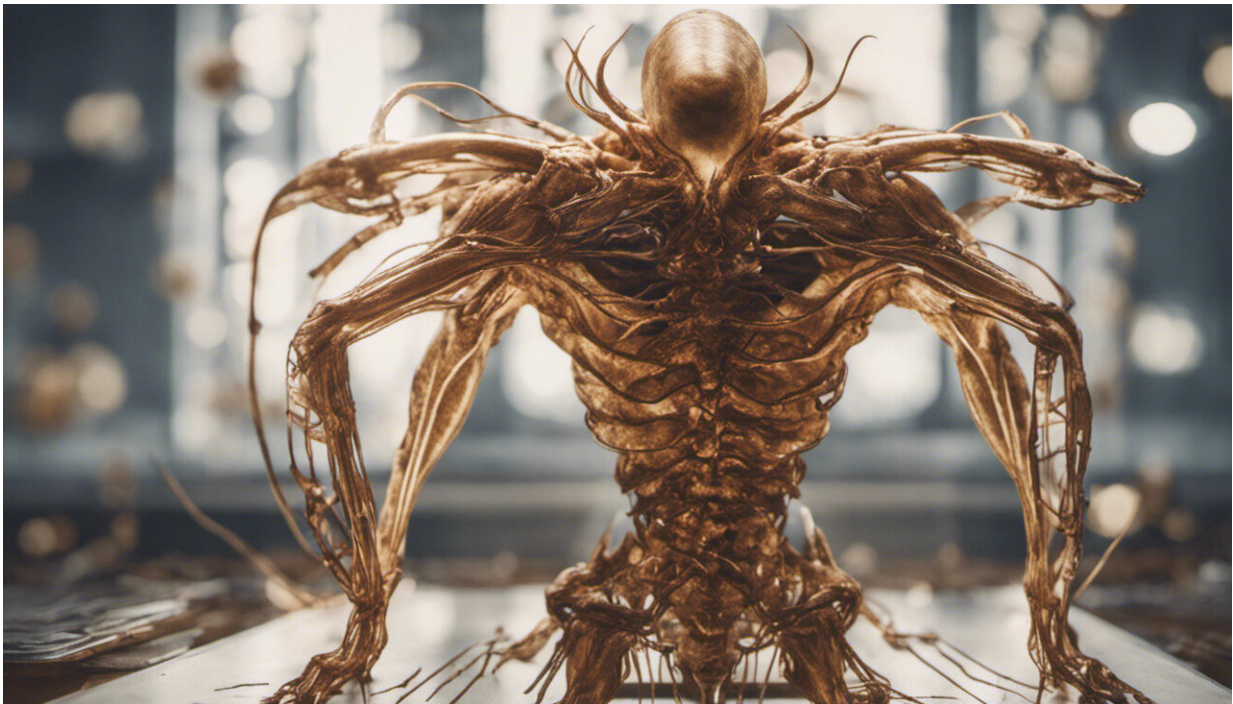


Study: Higher costs for complex cancer surgery indicator for worse care

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Credit: AI-generated image ([disclaimer](#))

Higher costs for complex cancer surgery may be an indicator for worse—rather than better—quality of care, according to new research by experts at Rice University and the University of Texas MD Anderson Cancer Center. Their findings are published in the journal *Surgery* and provide multiple implications for care delivery.

In the study, the authors analyzed Medicare hospital and physician claims from 2005 to 2009 for patients who were age 65 or older from all 50 states. The researchers looked at six different cancer operations: colectomy, rectal resection, pulmonary lobectomy, pneumonectomy, esophagectomy and pancreatic resection.

In their initial review of the data, they found that surgeons who performed just two operations of a specific type in a given year versus one could achieve patient cost savings for four of the six cancer operations, ranging from 0.6 percent for colectomy to 2.8 percent for pancreatic resection. Savings for the highest-volume surgeons (at the 95th percentile of the volume distribution) were even greater. A surgeon performing 14 pancreatic resections had patient [costs](#) that were 8.5 percent lower (\$3,286) than a surgeon who performed only one operation; and a surgeon performing 22 colectomies per year had costs that were 5.4 percent lower (\$1,089).

However, when the researchers accounted for the processes of care listed in each patient's treatment, the cost savings associated with high-volume surgeons decreased by 50 percent for pancreatic resection and completely disappeared for colectomy. Apparent cost savings for pulmonary lobectomy also disappeared, and [cost savings](#) for rectal resection also fell substantially, said co-author Vivian Ho, the chair in health economics at Rice's Baker Institute for Public Policy and director of the institute's Center for Health and Biosciences.

Processes of care are actions that health care providers take to improve the quality of care and [patient outcomes](#), such as placing of arterial lines or providing epidural anesthesia. Many of these are actions taken to avoid or treat complications that can occur during surgery.

"Basically, our analyses indicate that the lower patient costs achieved by high-volume surgeons can be explained by their lower occurrence of

processes of care that are associated with surgical complications, as well as their higher use of processes of care associated with better outcomes," said co-author Dr. Thomas Aloia, associate professor in the Department of Surgical Oncology, Division of Surgery, at MD Anderson.

"People mistakenly think that higher spending in health care implies higher quality care," Ho said. "In this case, higher spending is a marker of worse patient care. The results imply that patients who need [cancer surgery](#) can expect lower costs and better outcomes with high-volume surgeons."

"Can Postoperative Process-of-Care Utilization or Complication Rates Explain the Volume-Cost Relationship for Cancer Surgery?" was also co-authored by Marah Short, associate director of the Baker Institute's Center for Health and Biosciences.

The study references a 2008 paper by the authors that found that patients treated by surgeons performing a higher number of particular cancer operations (such as pneumonectomy for lung cancer or esophagectomy for esophageal cancer) had lower costs for their hospital stays compared with patients operated on by low-volume surgeons. However, the authors didn't know why this inverse volume-cost relationship existed.

Their new research set out to find the reasons underlying the volume-cost relationship.

"Our volume-cost comparison suggests that patients treated by low-volume surgeons were less likely to receive two processes of care (epidural anesthesia and daily epidural management) that have been associated with better patient outcomes," said Ho, who is also a professor of economics at Rice and a professor of medicine at Baylor College of Medicine. "However, patients treated by low-volume surgeons almost always were significantly more likely to experience

transfusions, consultations and complication-related processes of care (for example, TPN, critical care and inpatient consultations)." TPN stands for total parenteral nutrition, in which patients who are unable to eat are administered nutrients intravenously.

The results provide multiple implications for care delivery, the authors said. First, it may be beneficial to refer patients to high-volume surgeons because of the surgeons' enhanced value (higher quality with lower costs). Second, government and private insurers should compare measures of processes of care and complications across surgeons and notify hospitals about surgeons with high complication rates and processes of care associated with poor patient outcomes. Hospitals could work with surgeons to improve surgical care, which should improve patient care and lessen costs.

More broadly, the results suggest that action under the Affordable Care Act to shift hospital reimbursement toward bundled payment for hospitals and doctors for complex surgery should be encouraged, the authors said. "The current fee-for-service system often leads to higher payments for physicians and hospitals when [patients](#) suffer surgical complications and require higher levels of care," Ho said. "Specifying a fixed, bundled payment that doesn't vary with treatment intensity will discourage low-volume surgeons from performing operations that could generate costly complications for which they will not be compensated."

More information: Vivian Ho et al. Can postoperative process of care utilization or complication rates explain the volume-cost relationship for cancer surgery?, *Surgery* (2017). [DOI: 10.1016/j.surg.2017.03.004](https://doi.org/10.1016/j.surg.2017.03.004)

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