

# Costs for complications from cancer surgical care extremely high

January 6 2014

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Although complications from surgical care for cancer patients may seem infrequent, the costs associated with such outcomes are extremely high, according to researchers from Rice University's Baker Institute for Public Policy and the University of Texas MD Anderson Cancer Center. Their findings were reported in the Dec. 30 online edition of the journal *Cancer*.

"It is widely known that outcomes after [cancer surgery](#) vary widely, depending on interactions between patient, tumor, neoadjuvant therapy and provider factors," said Marah Short, a senior research analyst for the Baker Institute's Health Policy Forum. "An area of [cancer care](#) that has

received little attention is the influence of complications on medical outcomes and costs of care. In our study, we found consistently higher costs associated with cancer surgery complications. Improved patient outcomes and substantial health care savings could be achieved by targeting these complicating factors for quality improvement."

Short co-authored the article with Vivian Ho, the chair in health economics at the Baker Institute, a professor of economics at Rice and a professor of medicine at Baylor College of Medicine, and Thomas Aloia, an associate professor in the MD Anderson Cancer Center's Department of Surgical Oncology. The authors' findings come against the backdrop of rising cancer care costs in the United States, which were estimated at \$124.6 billion in 2010 and could rise by 66 percent to \$207 billion by 2020.

In cancer treatment, unlike many benign conditions, there tends to be a higher threshold of tolerance for complications, the authors said. In addition, the direct cause of complications is more difficult to determine as there are complex interactions between patient, tumor, multimodality therapy and provider factors that contribute to adverse outcomes.

In their study, the authors used the Agency for Healthcare Research and Quality's Patient Safety Indicators' (PSIs) definitions to identify patient safety-related complications in Medicare claims data. PSIs are a set of transparent outcome measures that provide information on potential in-hospital complications and adverse events after surgeries, procedures and childbirth. They analyzed hospital and inpatient physician claims from all 50 U.S. states for the years 2005 through 2009 for six cancer resections: colectomy, rectal resection, pulmonary lobectomy, pneumonectomy, esophagectomy and pancreatic resection.

They found overall PSI rates for complications arising from the six procedures ranged from a low of 0.01 percent for postoperative hip

fracture to a high of 2.58 percent for respiratory failure. Rates of postoperative respiratory failure, death among inpatients with serious treatable complications, postoperative thromboembolism and accidental puncture/laceration were more than 1 percent for all six cancer operations. Several PSIs—including decubitus ulcer, postoperative thromboembolism and death among surgical inpatients with serious treatable complications—raised hospitalization costs by more than 20 percent for most types of cancer surgery. Postoperative respiratory failure resulted in a cost increase of more than 50 percent for all cancer resections.

"These data indicate that even in the complex [cancer](#) care environment, in which many controllable and uncontrollable variables may contribute to complications, improvements in patient safety indicators are highly likely to reduce costs," Short said. "We may not have identified all of the complication measures that are important determinants of surgeon and hospital costs. However, because we know so little about the links between provider volume, care processes, [complications](#) and [costs](#), this analysis represents an important first step in examining these relations."

**More information:** "The Influence of Complications on the Costs of Complex Cancer Surgery," *Cancer*, 2013.

Provided by Rice University

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