

Mayo Clinic chest surgeons propose measures for indicating quality of lung surgery

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Even though 30,000 patients in the United States undergo lung surgery each year, no standard criteria exist to measure the quality of their care. In the current issue of *The Annals of Thoracic Surgery*, Mayo Clinic surgeons have proposed a system of lung surgery quality indicators for surgeons and the public as a method to demonstrate best practices for obtaining positive patient outcomes.

Death rates following surgery are frequently reported. However, because they aren't adjusted for factors such as patient age and disease severity, they don't tell the whole story. To overcome this lack of risk adjustment in death rate data, the Mayo Clinic team proposed patient-centered processes that should occur prior to, during and after surgery to assure the likelihood of best surgical outcomes.

"There are certain processes that we can measure and report that clearly indicate whether patients have received high-quality care around the time of their lung operation," explains Stephen Cassivi, M.D., Mayo Clinic thoracic surgeon and lead study author.

"Knowing this data can help patients decide about the care they are about to receive and where to go to receive that care - and equally important, this knowledge can help chest surgery programs improve their quality of care by concentrating on identified weaknesses," Dr. Cassivi says. "Creating standards through measures of process will allow for

directed quality improvement initiatives across all surgical centers."

The criteria were first presented at the 2007 Annual Meeting of the Society of Thoracic Surgeons.

In an accompanying editorial in the same issue of *The Annals of Thoracic Surgery*, Alex Little, M.D., chair of the department of surgery at Wright State Boonshoft School of Medicine, Dayton, Ohio, asserts that developing these process measures of quality to improve patient outcomes has a "certain moral imperative." The editorial goes on to state: "We must take the lead from this group of nationally recognized leaders in general thoracic surgery and honestly analyze, document, and react to an impartial review of our outcomes and use that information to improve systems and care algorithms, even if it means the painful acknowledgment that one's own habitual techniques are not the best."

The Mayo Clinic List of Quality Indicators

To find the clearest and most meaningful measures to evaluate the quality of lung surgery, the Mayo Clinic team analyzed the care of 606 lung surgery patients who underwent 628 lung surgeries at Mayo Clinic throughout 2005. The patients' average age was 65.8 years and ranged from 2 to 93 years.

From the analysis, the following list emerged for processes that should occur prior to surgery because of their potential contribution to positive patient outcomes.

- Pulmonary function testing
- Electrocardiogram
- Smoking history documentation
- Smoking cessation therapy offered to those patients still smoking prior to surgery

-- Appropriate preoperative staging of cancer

In addition, the Mayo Clinic team identified post-lung surgery practices that improve patient outcomes. These include: use of incentive spirometry - a simple breathing exercise meant to increase lung capacity and prevent postoperative pneumonia; timely response to heart rhythm disturbances; defined measures to prevent venous clots (deep vein thrombosis); documented timely attention to pain control for patients' comfort; and follow-up care planning with the patient prior to discharge from the hospital.

The Next Step

Mayo Clinic surgeons continue to work with groups such as The Society of Thoracic Surgeons to formalize the collection and evaluation of measures of surgical quality. Adopting quality process measures as standards and compiling data regarding adherence to these standards can be accomplished using national databases such as The Society of Thoracic Surgeons general thoracic surgery database.

Other surgical areas, such as cardiac surgery, have long had quality measures, but this is the first time quality measures are being proposed for lung surgery. The measures fill a "noticeable void," says Dr. Cassivi.

"Our Mayo Clinic experience shows that if the whole general thoracic surgery team - from surgeons to nurses, nurse educators, physician assistants and physical therapists - uses these process measures as indicators of a high quality of care, areas for improvement can be identified and improved in a timely fashion," he says. "If all practices used these indicators, the huge variability in care of lung surgery patients could be reduced and overall quality increased."

Source: Mayo Clinic

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