

Cost and Bundled Payment Outcome Analysis Between Surgical Specialties Performing Anterior Lumbar Interbody Fusions

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Introduction

Anterior lumbar interbody fusion (ALIF) is performed to treat various spinal pathologies. The potential implementation of episode-based bundled payments to ALIF warrants analysis of efficiency with all aspects of the care episode. Both neurological and orthopedic surgeons perform the procedure, creating a possible factor for outcome and cost discrepancies.

Methods

This retrospective study included 497 patients who underwent ALIF at a single institution from 2006 – 2016. All ALIF procedures were queried and confirmed by the CPT code: 22558. All patients that underwent ALIF performed by a spine surgeon were placed into two different cohorts based on the primary surgeon, with patients having a primary non-spine surgeon being excluded. Both univariate and multivariate logistic regression models were used to analyze the impact of surgical service on demographics, cost, length of stay, readmissions, discharge disposition, and emergency department visits.

Results

129 patients underwent ALIF from a neurological surgeon and 368 from an orthopedic surgeon. The neurosurgery cohort had a significantly higher percentage of patients with an ASA Class greater than 2 (45.74% vs. 26.83%, $p < 0.0001$). In addition, the neurosurgery cohort had a significantly higher unadjusted rate of ED visits within 30 days (6.20% vs. 2.17%, $p = 0.03$) and 90 days (8.53% vs. 2.44%, $p = 0.002$) of the operation. After adjustment, 90-day ED visits remained significantly higher in the neurosurgery cohort, with orthopedics as reference (3.614[1.43-0.15], $p = 0.0067$). After adjustment for patient-level and resource utilization variables, there were no differences in neurosurgical costs when compared to orthopedic costs (-\$904; 95% CI: -\$3,558 – \$1,750; $p = 0.50$).

Conclusions

Reducing 90-day ED visits may be a target for quality improvement between specialties; however, the present results suggest few differences in outcomes between neurosurgery and orthopedics for patients undergoing ALIF. One limitation of this study remains the patient population being pulled from a single institution, necessitating further analysis to determine their

Learning Objectives

To determine if surgical specialty plays a role in episode-based outcomes or cost for patients undergoing ALIF.

References