

# Drivers and Components of Hospital Costs After Transsphenoidal Resection of Sellar Tumors

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## Introduction

Assessing treatment costs of transsphenoidal surgery for removal of sellar lesions can be complex. Few data are available regarding what contributes to higher costs after these procedures. The goals of this study were to clarify cost drivers in transsphenoidal sellar surgery, to determine what categories contributed the most to these costs, and to evaluate the relationship between expenditures and short-term patient-reported outcomes.

## Methods

The authors used a proprietary institutional database tool—the Value Driven Outcomes database—to review prospectively collected data on transsphenoidal sellar surgery over a nearly 5-year period. Hospital costs, demographic data, disease-specific variables, hospital-related measures, and patient-reported outcomes in the form of Euro-QoL-5D (EQ-5D) responses were collected for all patients.

## Results

One hundred seventeen patients met the inclusion criteria. A multivariable logistic regression model for hospital costs showed a significant association between higher costs and adrenocorticotrophic hormone–secreting tumors (OR 30.409, 95% CI 2.695-343.121), larger tumor size (OR 1.084, 95% CI 1.026-1.146), and in-hospital complications (OR 4.209, 95% CI 1.268-13.968). The largest contributor to hospital costs in our cohort was facility cost (75%), followed by pharmacy (13%) and supply (7%) costs. Most patients (65.8%) had stable or improved EQ-5D responses at 1-month follow-up, with significantly lower preoperative EQ-5D scores than those who reported worsened quality of life ( $0.776 \pm 0.209$  vs.  $0.867 \pm 0.148$ ,  $p=0.015$ ) and significantly higher postoperative EQ-5D scores ( $0.887 \pm 0.144$  vs.  $0.759 \pm 0.144$ ,  $p<0.001$ ) on univariate analysis.

## Conclusions

Most patients undergoing transsphenoidal surgery for sellar tumors experience stable or improved postoperative quality of life, even shortly after surgery. Factors associated with increased costs of surgery included larger tumor size and in-hospital complications. Using these data, further study can be directed at determining which interventions may improve the value of transsphenoidal surgery.

## Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the importance of determining cost drivers for transsphenoidal surgery. 2) Discuss, in small groups, how knowledge of cost contributors to transsphenoidal surgery can be used to improve value of care. 3) Identify an effective intervention for reducing cost of transsphenoidal surgery.

## References

Lee VS, Kawamoto K, Hess R, Park C, Young J, Hunter C, et al: Implementation of a Value-Driven Outcomes Program to Identify High Variability in Clinical Costs and Outcomes and Association With Reduced Cost and Improved Quality. *JAMA* 316:1061-1072, 2016