

Patient Out-of-Pocket Spending for Neurosurgical Operations is Increasing: Analysis of 13,673 Consecutive Cases from a Tertiary Referral Center

Michael Anthony Mooney MD; Seungwon Yoon; Tyler Scott Cole MD; John Paul Sheehy MD; Michael Bohl MD; Frank Barranco MD; Peter Nakaji MD; Andrew S. Little MD; Michael T. Lawton MD

Introduction

Patient out-of-pocket (OOP) spending is an increasingly discussed topic in our evolving healthcare environment; however, there is minimal data available on the patient financial burden of neurosurgical procedures. We sought to analyze hospital and surgeon payment data for neurosurgical patients from a comprehensive payer and case mix.

Methods

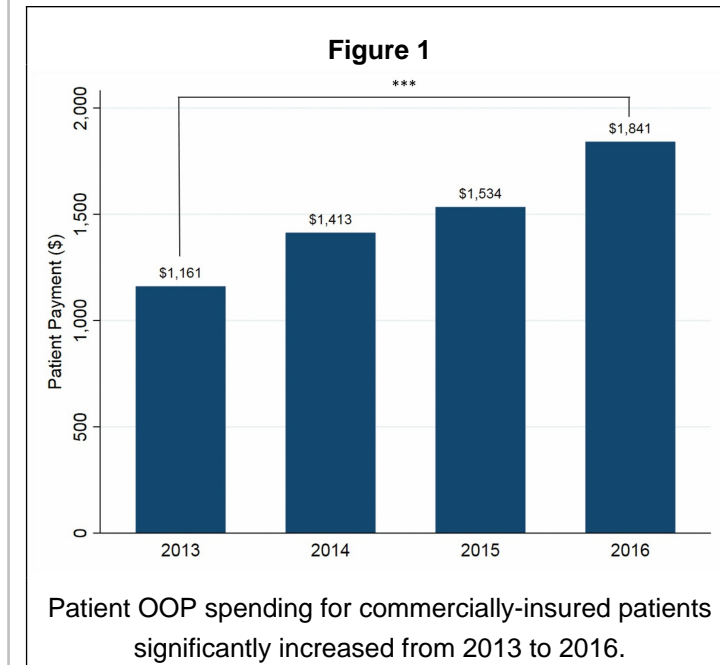
13,673 consecutive neurosurgical operative admissions from 2013 to 2016 were analyzed. Patient payment data for hospital care and surgeon professional fees were extracted from the hospital administrative accounting program and the neurosurgeon private practice billing system, respectively. Analysis was performed using a multivariate mixed-effects linear regression model. Variables considered included patient age, sex, length-of-stay (LOS), case category, insurance type, SOI/ROM scores, and elective vs. emergency status.

Results

Patient age, insurance type, case category, and LOS were independent predictors of patient OOP spending ($P < 0.05$). Anterior/lateral spinal fusion and cranial endoscopic operations were associated with the highest patient OOP spending for all patients ([mean \pm standard error]: $\$858 \pm 81$ and $\$1,005 \pm 167$, respectively), as well as for commercially-insured patients specifically ($\$1,662 \pm 165$ and $\$1,637 \pm 298$, respectively). Despite controlling for inflation, case mix, and patient mix, mean patient OOP spending grew 42% per patient encounter from 2013 to 2016 ($\$624 \pm 90$ in 2013 to $\$886 \pm 98$ in 2016, $P = 0.05$). Commercially insured patients experienced more significant growth in OOP spending, with a cumulative rate of growth of 59% ($\$1,161 \pm 179$ in 2013 to $\$1,841 \pm 213$ in 2016, $P = 0.009$) (Figure 1).

Conclusions

Patient OOP spending for neurosurgical patients increased significantly from 2013 to 2016, representing increased healthcare costs and patient cost sharing in an evolving healthcare environment. Patients and providers can consider this information prior to surgery to better anticipate the financial burden of neurosurgical care. These findings deserve increased attention and analyses on a national level.



Learning Objectives

By the conclusion of this session, participants should be able to

- 1) Identify the lack of data available on patient out-of-pocket (OOP) cost for neurosurgical care.
- 2) Discuss the rising OOP spending for neurosurgical care and consider the implications of this trend.
- 3) Identify next steps for analyzing these findings on a national level.
- 4) Consider future policy interventions that may help curtail this negative trend for neurosurgical patients.

[Default Poster]