

## Learning Objectives

To improve awareness on healthcare costs

## Introduction

Geographic variations in healthcare costs have been described across many specialties. There is paucity of data regarding the regional costs associated with transsphenoidal pituitary surgery in the US.

## Methods

Data from the Marketscan database from 2010-2014 was analyzed. We examined overall total payments, hospital/facility payments, physician reimbursements, and out-of-pocket expenses for patients undergoing microscopic and endoscopic transsphenoidal pituitary surgery. Average cost-estimates were obtained after risk-adjustment for confounders and estimated cost-differences were obtained.

## Results

The estimated average annual burden of transsphenoidal pituitary surgery was \$42 million/year.

The average regional overall total payments were as follows:

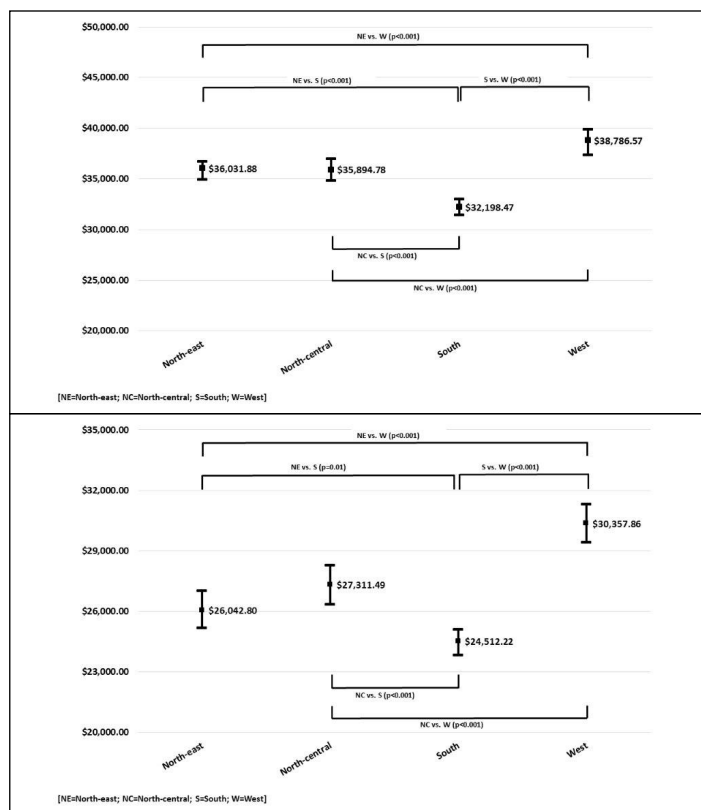
North-east [\$36,031.88±793.38], North-central [\$35,894.78±853.60], South [\$32,198.47±853.60], and West [\$38,786.57±931.45].

The average regional hospital/facility costs were as follows:

North-east [\$26,042.80±700.42], North-central [\$27,311.49±748.44], South [\$24,512.22±585.83] and West [\$30,357.86±816.71].

The average regional physician payments were as follows:

North-east [\$5,382.97±168.89], North-central [\$4,994.42±180.47], South [\$4,001.24±141.26],



**Figure - Regional variation in (a) overall total costs (upper) and (b) hospital/facility costs (lower) of transsphenoidal pituitary surgery**

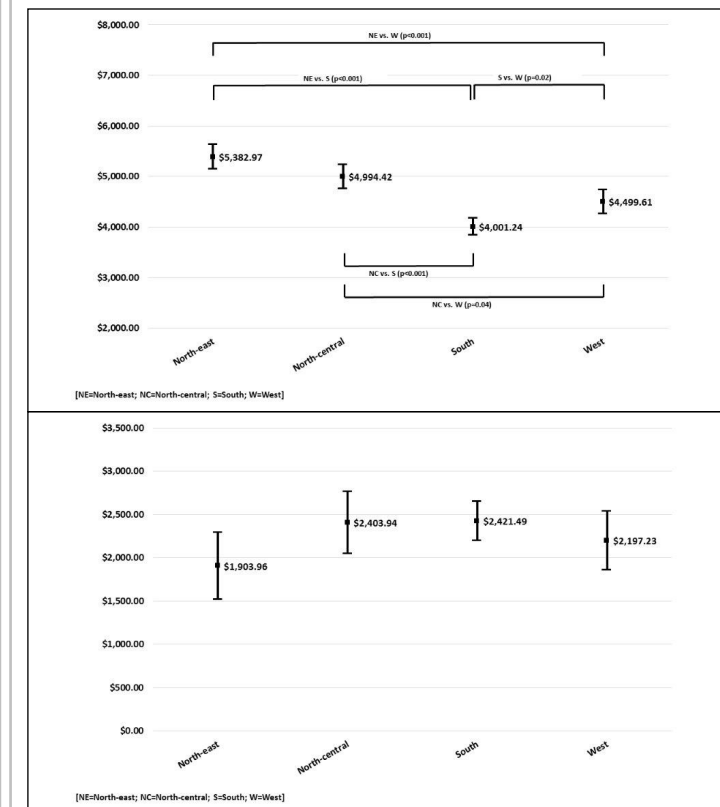
## Results (continued)

Compared to the North-east, overall total and hospital/facility costs were higher in the West and lower in the South (both  $p < 0.001$ ), while physician reimbursements were lower in both the West and South (both  $p < 0.001$ ). There were no significant differences in out-of-pocket expenses across regions ( $p = 0.76$ ) (See Figures a-d).

At the national level, there were significantly higher overall total payments and hospital/facility payments associated with endoscopic compared to microscopic procedures ( $p < 0.001$ ).

Despite significant regional differences in the proportion of within-network and out-of network providers, there were overall similar out-of-pocket payments across regions.

## Results (continued)



**Figure - Regional variation in (c) physician reimbursements (upper) and (d) out-of-pocket expenses (lower) of transsphenoidal pituitary surgery**

## Results (continued)

Multivariate models demonstrated that length of stay, health-plan, and post-surgical complications were among significant predictors of costs of transsphenoidal pituitary surgery (all  $p < 0.001$ ).

## Conclusions

Our results demonstrate significant geographical disparities in costs associated with transsphenoidal pituitary surgery. Understanding factors underlying disparate costs is important for developing strategies to help control costs.