Regional Variation in Procedures and Charges for Ambulatory Endoscopic Sinus Surgery

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ABSTRACT

Objective: 1. Determine if there is significant geographic variation in surgical charges for endoscopic sinus surgery (ESS) across states and 2. understand factors that influence charges.

Methods: The State Ambulatory Surgery Databases (2010) for Florida, Iowa, New York and North Carolina were analyzed, extracting cases of adult endoscopic sinus surgery. Demographic, diagnostic, procedural, insurance and charge data were tabulated. Extent of surgery was quantified by number of sinusotomies and other nasal procedures (e.g. septoplasty) performed. Variation in state-to-state total charges for ESS was determined adjusting for demographic and procedural parameters.

Results: 22,554 ambulatory ESS cases were examined across four states (mean age, 48.5 years; 51.6% female). Private insurance and Medicare were the primary payers in 69.5% and 19.3% of cases, respectively. Image guidance was utilized in 21.0% and polyps were present in 26.8% of cases. There was wide variation in the distribution of sinusotomies per case performed. Florida had the highest percentage of five-sinusotomy cases (18.8%) versus 15.9% for New York and only 7.0% for Iowa (p<0.001). Adjusting for image guidance, polyposis, other nasal surgery, number of sinusotomies, payer and median household income, there was a significant difference in mean total charges for ESS by state: Florida ($22,403), Iowa ($17,574), North Carolina ($14,650) and New York ($12,641; p<0.001 ANOVA).

Conclusion: Considerable state-to-state variation in charges for ambulatory ESS exists. This data will become increasingly important as mandates for charge and cost transparency for the healthcare consumer manifest nationally. Efforts to determine reasons for these cost variances should be undertaken.

INTRODUCTION

Chronic rhinosinusitis (CRS) afflicts up to 5.8% of the American adult population. A significant portion of cases remain refractory resulting in approximately 230,000 endoscopic sinus surgery (ESS) procedures per year.

Recently, there is been renewed interest in geographic and other variations in healthcare provision. Potentially unjustified healthcare variations could be targeted for improvements in efficiency and healthcare system savings.

There is also an increasing desire from the public and other consumers of healthcare for transparency in availability of healthcare cost data.

Given that ESS is a relatively commonly performed otolaryngologic procedure, we sought to determine if there is significant geographic variation in extent of surgery and charges for these procedures in the United States.

METHODS

We analyzed the State Ambulatory Surgery Databases for Florida, Iowa, New York and North Carolina for calendar year 2010.

Demographic (age, sex and median household income), diagnostic (+/- polyps), procedural (sinusotomies based on CPT code), insurance status (payer type) and total charge data were tabulated. Extent of surgery was quantified by the number of sinusotomies and other nasal procedures (e.g. septoplasty and image guided surgery) performed.

Overall variation in state to state total charges for ESS was determined with univariate analysis. Next, multivariate analysis was performed examining for state to state variation in total charges adjusting for image guidance, polyposis, other nasal surgery, extent of surgery, payer mix and median household income. Charges were modeled with an inverse Gaussian distribution and statistical significance was set at p=0.05.

RESULTS

Overall, 22,554 ambulatory ESS cases were studied across the four states (mean age, 48.5 years; 51.6% female).

Unadjusted comparisons revealed the following charges for ESS by state:

DISCUSSION

In this multi-state, cross-sectional analysis, we found significant state to state variations in both the diagnostic and procedural components of ESS. Even adjusting for these component variations with multivariate analysis, we found significant further variation in the mean total charges per ESS case. The difference in mean total charges for ESS between the lowest (New York) and highest (Florida) states was $9,762. This difference is itself approximately 77% of the mean total charges for ESS in New York state.

Geographic variations in care for CRS have been noted previously. Other studies have identified significant variations in medications prescribed for CRS. These data add an economic perspective to geographic variations in surgical care for CRS. The substantial variation in charges does merit further study.

Several limitations of the current study merit mention. First, we were only able to compare mean total charges for ESS from state to state. Charges are commonly reflective of actual payments but they are not equivalent. Interestingly, as patients adopt the role of consumer, they will likely be interested in charges and costs when selecting among healthcare options. Therefore charge analyses are still relevant. Second, there may be other confounding variables, for which we could not control in the multivariate model.

CONCLUSIONS

• Considerable state-to-state variation in charges for ambulatory ESS exists.
• Such data will become increasingly important as mandates for charge and cost transparency for the healthcare consumer manifest nationally.
• Efforts to determine reasons for these cost variances should be undertaken.

REFERENCES