

Industry research payments made to physicians across surgical subspecialties: a cross-sectional analysis of the 2018 CMS Open Payments database

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Background

The Centers for Medicare and Medicaid Services (CMS) Open Payments Database allows the public to view payments made to physicians by the pharmaceutical industry. These payments may be an indication of financial biases that exist within the medical field, particularly within the surgical specialty. Understanding the financial relationships between pharmaceutical manufacturers and surgical subspecialties will help the public make more educated decisions regarding their health and lead to better regulations managing surgeon-pharmaceutical relationships. The goal of this study was to identify potential biases across surgical subspecialties by examining the differences in research payments made to the orthopedic, thoracic, neurological, vascular, and plastic surgeons. We hypothesized that the variance in mean industry research payment across surgical subspecialties is statistically significant.

Methods

A cross-sectional secondary analysis was conducted using the 2018 CMS Open Payments database. The CMS Open Payments database is open source and easily downloaded from the CMS Open Payments website. The dataset was maintained in Microsoft Excel and analyzed using SAS software version 9.4. Descriptive statistics were performed to estimate the median and average industry research payments made to the orthopedic, thoracic, neurological, vascular, and plastic surgery subspecialties. The variance in means was calculated using the one-way ANOVA test to determine if there is a significant difference in average industry payments across surgical subspecialties at a p-value of 0.05. For significant ANOVA tests, Tukey's honestly significant difference post hoc test was conducted to determine significant pairs. Further analyses are currently being conducted to assess how the variance in payment is influenced by the payment type, including: drug, biologic, and medical device payments.

Results

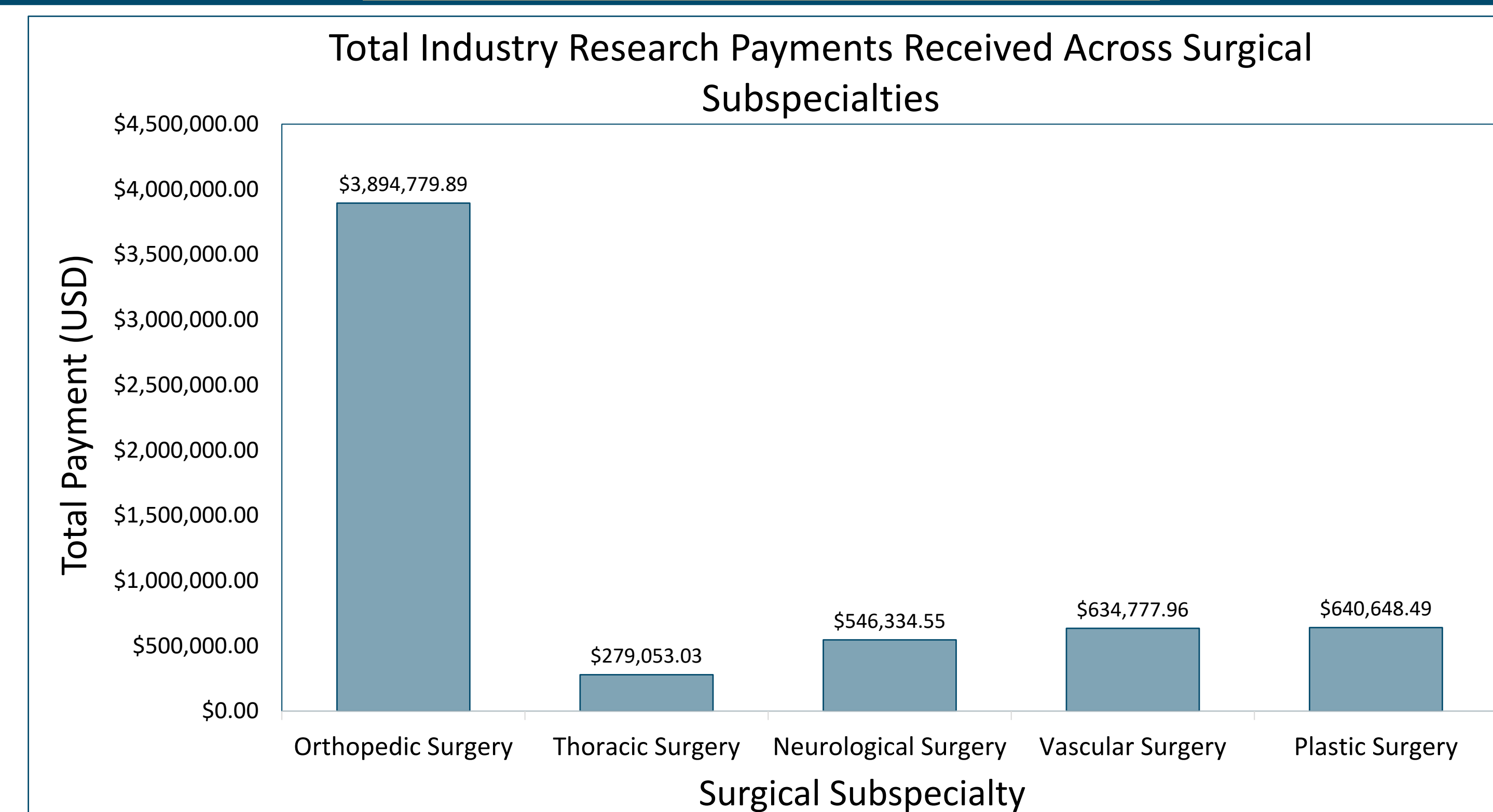


Figure 1. Total Industry Research Payments Received Across Surgical Subspecialties. Payment amounts were stratified by surgical subspecialty and the total amount of payments received were calculated using SAS software version 9.4.

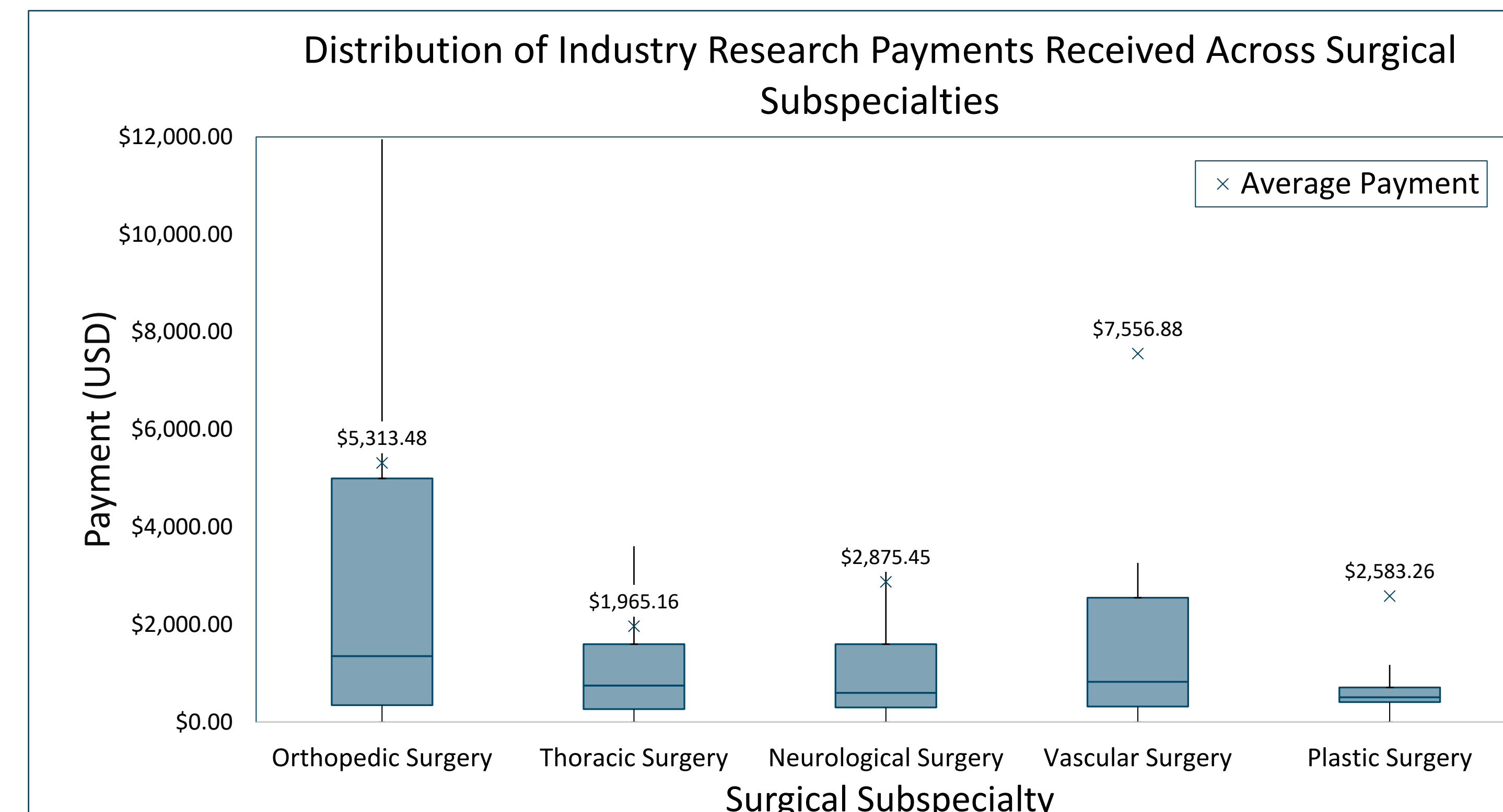


Figure 2. Distribution of Industry Research Payments Received Across Surgical Subspecialties. The mean, median, range, and interquartile range of industry research payments received was calculated for each surgical subspecialties using SAS software version 9.4. The true maximum payment for each surgical subspecialty were outliers and lie beyond the graph. Means are depicted by "x."

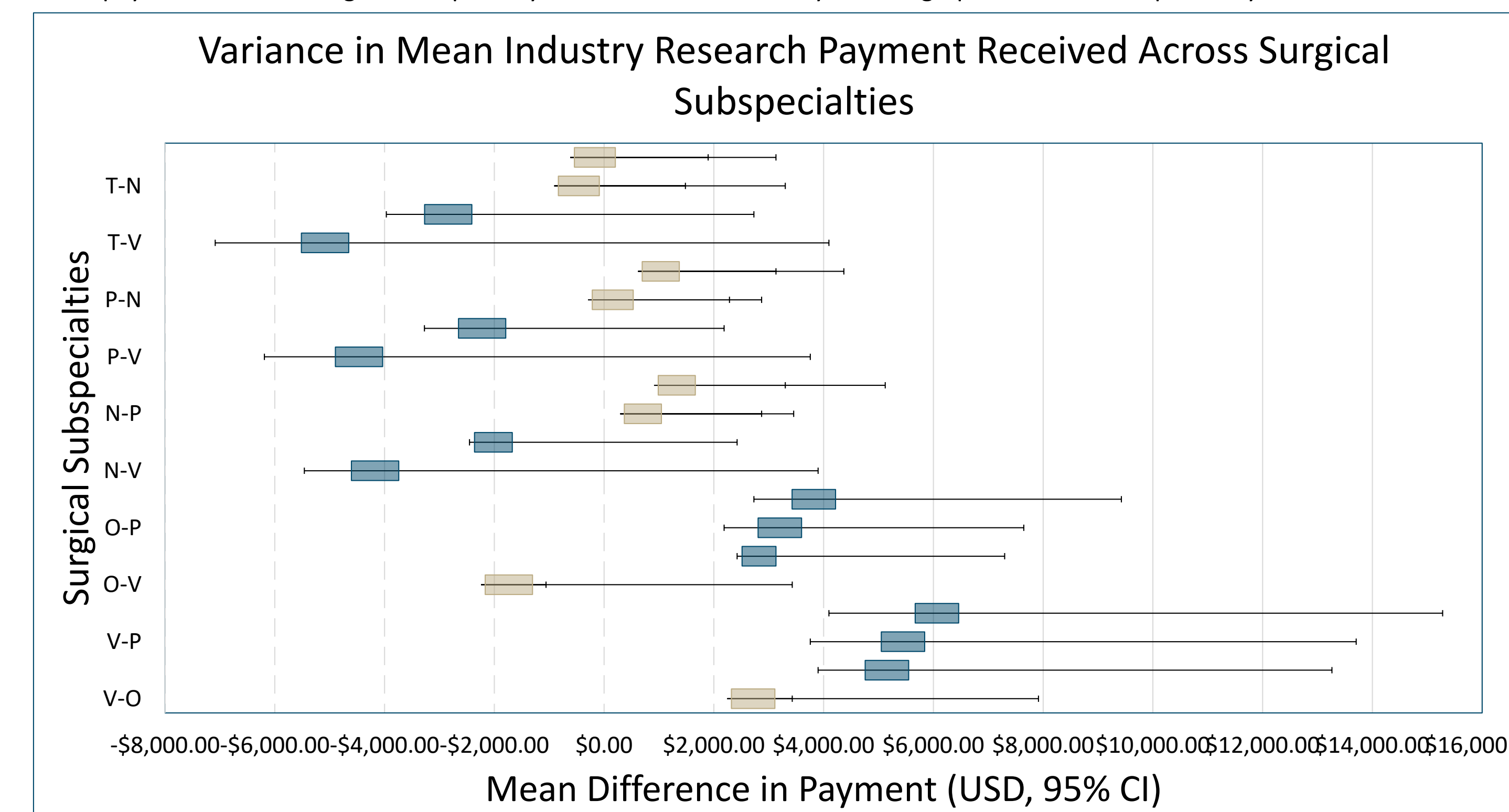


Figure 3. Variance in Mean Industry Research Payment Received Across Surgical Subspecialties. A One-Way ANOVA was calculated for the variance in mean payment across surgical subspecialties and was found significant ($p < 0.0001$). Tukey's honestly significant difference post hoc test was conducted to determine the significant pairs. T=Thoracic P=Plastic O=Orthopedic V=Vascular N=Neurological. Significantly different means are depicted in blue. Non-significantly different means are depicted in gold.

Conclusions

- In 2018, industry research payments made to surgeons varied. One surgeon received \$165,313, while several others received as little as \$1.00 in industry research payments.
- Orthopedic surgeons received the highest total industry research payments in 2018 at \$3,894,779.89.
- Vascular surgeons received the highest average industry research payment of \$7,556.88.
- The variance in mean industry research payments received across the orthopedic, thoracic, neurological, vascular, and plastic surgical subspecialties was statistically significant ($p < 0.0001$).
- The pairs with statistically significant variances in means were Vascular/Neurological, Vascular/Plastic, Vascular/Thoracic, Orthopedic/Neurological, Orthopedic/Plastic, and Orthopedic/Thoracic.
- Ongoing studies are currently examining how the received product type vary across these surgical subspecialties.

References

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