

Current procedural terminology

The aim of this study was to analyze how a Current Procedural Terminology (CPT)-based categorization method can predict cost variation in surgical spine procedures.

Summary of background data: Neck and back disorders affect a majority of the adult population and account for tens of billions of dollars in health care spending each year. In the era of bundled payments and value-based reimbursement, it is imperative for surgeons to identify sources of cost variability across surgical spine procedures. Historically, this has been accomplished using Medicare Severity Diagnosis Related Group (MS-DRG) codes, but they utilize an overly simplistic categorization of surgical procedures. The specificity and familiarity of the CPT coding structure makes it a better option for categorizing differences in surgical decision making and technique.

Methods: Hospital billing data for patients undergoing a surgical spine procedure requiring an overnight, in-patient stay was retrospectively collected over 4 fiscal years (2012-2016) from a single health care system. Linear regression analysis was performed to assess the correlation between cost variation and: spine-specific MS-DRG codes; a novel CPT-based categorization method; and the combination of MS-DRG codes and CPT-based categorization.

Results: There were 5020 surgical procedures were analyzed with respect to 16 different MS-DRG codes and 30 distinct CPT-based surgical categories (CSCs). Linear regression results were: MS-DRG $R^2 = 0.6545$ ($P < 0.001$); CSC $R^2 = 0.5709$ ($P < 0.001$); and $R^2 = 0.744$ for the combined MS-DRG and CSC methods ($P < 0.05$). Median difference between the actual and predicted cost for the combined model was -\$261.00, compared with -\$727.50 for the CSC model and -\$478.70 for the MS-DRG model.

Conclusion: Addition of the CPT-based categorization method to MS-DRG coding provides an enhanced method to evaluate the association between predicted and actual cost when using linear regression analysis to assess cost variation in spine surgery. Level of Evidence: 3¹⁾.

1)

Baum GR, Stricsek G, Kumarasamy MA, Thirunavu V, Esper GJ, Boden SD, Refai D. Current Procedural Terminology-based Procedure Categorization Enhances Cost Prediction of Medicare Severity Diagnosis Related Group in Spine Surgery. *Spine (Phila Pa 1976)*. 2021 Mar 15;46(6):391-400. doi: 10.1097/BRS.0000000000003801. PMID: 33620184.

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