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Drivers of Total Knee and Total Hip Arthroplasty Implant Purchase Prices

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Introduction: The study purpose was to determine the drivers of the variation in prosthetic implant purchase prices across hospitals for primary TKA and THA (collectively, TJA) procedures.

Methods: The average purchase price for each type of implant was collected from twenty-seven high volume U.S. hospitals with similar patient demographics. Other variables collected included: whether the choice of implant vendors was primarily determined by surgeons or a joint committee of surgeons and hospital employees; whether contracts with implant vendors were entered into at the hospital or health system level; whether the purchasing decision for each type of implant was made separately or whether they were purchased as part of a package deal; whether an implant vendor rep would be present during surgery; whether the hospital is an academic medical center; TJA annual volume; and average number of TJA vendors. All variables were included in a multivariate linear regression to identify their percentage impact on price.

Results: There was a 2.1x [1.7x] range from the 90th to the 10th percentiles of purchase price for TKA [THA] implants. The multivariate regression explained 45% of the variation in prices. Use of a joint committee to select vendors resulted in a 19.8% lower purchase price ($p=.001$) relative to having only the surgeons select the vendors. Volume was also statistically significant, but an additional 100 TJA volume only resulted in a 1.6% lower price ($p=.002$). Two variables neared significance at the 5% level: contracting at the health system (as opposed to hospital) level resulted in a 11.4% lower price ($p=.077$), and each additional vendor resulted in a 2.6% higher price ($p=.074$). The other variables were not statistically significant.

Conclusion: The hospital characteristics and purchasing approaches studied explained 45% of the variation in implant prices. Hospital-physician alignment is a strong predictor of lower prices.
