Is It Getting More Expensive to Treat Patients with High Comorbidities? Financial Trends in Total Knee Arthroplasty from 2013 to 2021
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INTRODUCTION: The utilization of total knee arthroplasty (TKA) continues to rise in patients with a high comorbidity burden (HCB). With changes in reimbursement models over the past decade, it is essential to assess the financial impact of HCB TKA on healthcare systems. This study aimed to examine trends in revenue and costs associated with TKA in HCB patients over time.

METHODS: Of 14,978 TKA performed between 2013 and 2021, we retrospectively analyzed HCB patients (Charlson comorbidity index [CCI] ≥ 5 and American Society of Anesthesiology [ASA] scores of 3 or 4). A total of 1,156 HCB TKA patients with complete financial data were identified. Patient demographics, perioperative data, revenue, costs, and contribution margin (CM) were collected per patient. Changes in these financial values over time, as a percentage of 2013 values, were analyzed. Linear regression was performed with a trend analysis to determine significance.

RESULTS: From 2013 to 2021, the percentage of HCB TKAs per year increased from 4.2% in 2013 to 16.5% in 2021 (p<0.001). The revenue of TKA in HCB patients remained steady (P=0.093). Direct costs increased significantly (32%; P=0.015), resulting in a decline of CM to a low of 82.3% of the 2013 values, although not statistically significant (P=0.130). There was no significant change in rates of 90-day complications or home discharge following HCB TKA during the study period.

DISCUSSION AND CONCLUSION: The results of this study indicate a significant rise in cost for TKA among HCB patients, without a corresponding rise in revenue. As more patients with HCB become candidates for TKA, the negative financial impact on institutions should be considered. Payments to institutions do not adequately reflect patient complexity. Reevaluation of institutional payments for medically complex TKA patients is warranted to maintain patient access to these procedures.