

Episode-of-Care Savings: Outpatient Total Knee Arthroplasty Proves More Affordable Than Inpatient Surgery

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INTRODUCTION:

Total knee arthroplasty (TKA) is the most common joint replacement procedure in North America. Few studies have successfully evaluated the episode-of-care cost (EOCC) of common elective orthopedic procedures using an activity-based costing (ABC) framework. The objective of this study is to compare the EOCC of same-day discharge versus inpatient TKA using an activity-based costing methodology.

METHODS:

An observational case-control study was conducted comparing EOCC of 25 consecutive patients who underwent same-day discharge (SDD) TKA and 25 consecutive patients who underwent same-day admission (SDA) TKA at a Canadian academic center. EOCC was generated using an ABC framework. The episode-of-care consisted of the surgical episode from their arrival to the preoperative unit to their discharge from the hospital and hospital costs incurred for 6 weeks postoperatively. Two-tailed T-tests were used to compare demographic data between the two groups and Mann-Whitney U tests were used to compare sample means for the costing data. Statistical significance level was set at $p < 0.05$.

RESULTS:

The median total EOCC for outpatient TKA was \$7,243.26 CAD (IQR=614.12), while the median EOCC in the inpatient group was \$8,303.94 CAD (IQR=1,157.77). The costs incurred secondary to the hospital admission were the main driver of the increased cost for inpatients. Patients in the outpatient group were younger ($p < 0.01$) and had a lower mean Charlson Comorbidity Index group ($p = 0.01$). There was no significant difference in gender, BMI and ASA scores between the two groups. The mean length of stay for admitted patients was 2.45 days (SD=1.52).

DISCUSSION AND CONCLUSION:

This study demonstrates that the total cost of outpatient TKA was on average 15% lower than the cost of TKA with the standard inpatient postoperative protocol. The ABC framework provides an accurate estimate of EOCC than traditional accounting methods and is a more detailed representation of indirect costs by considering how much of each resource is used to generate a particular service or product instead of using arbitrary overhead costs.