

Profiling Episode-of-Care Costs in Total Joint Arthroplasty Under Bundled Payment Models: A Comparative Analysis of DRG 469 and 470

Hannah I Travers, Sade Olatunbosun, Mikhail Kuznetsov, Katharine P Playter, Sophia M Ly, Ruijia Niu, Brian Hollenbeck, Eric Louis Smith, Carl T Talmo

INTRODUCTION:

Bundled payment models have become increasingly common in total joint arthroplasty (TJA), incentivizing efficient, value-based care. Understanding cost distribution within these episodes is essential for optimizing resource utilization and improving patient outcomes. This study characterizes the episode-of-care cost profiles for patients assigned to Diagnosis-Related Groups (DRG) 469 and 470, which reflect major and non-major complications, respectively, following TJA.

METHODS:

A retrospective analysis was conducted using the Merative MarketScan Commercial and Medicare Supplemental databases from 2018 to 2022. We retrospectively analyzed claims data for 200 TJA cases, 100 DRG 469 and 100 DRG 470. For each group, inpatient, post-acute, and ancillary care costs were summarized. Key episode metrics included inpatient admission costs, length of stay, 30-day readmissions, emergency department (ED) visits, discharge disposition, and utilization of post-discharge services including home health and outpatient physical therapy (PT).

RESULTS:

DRG 469 (n = 100), representing cases with complications, had a mean inpatient cost of \$25,801.70 (SD: \$18,903.59) and a mean total episode cost of \$34,462.01. Mean length of stay was 4.8 days. Post-discharge, 45% were discharged to a nursing facility, 66% received home health, and 31% attended outpatient PT. Readmissions occurred in 11% of patients, with 12% presenting to the ED. Inpatient admission accounted for 74.9% of total costs. **DRG 470** (n = 100), representing uncomplicated cases, had a mean inpatient cost of \$21,206.61 (SD: \$14,492.56) and a mean total episode cost of \$25,244.51. Mean length of stay was 2.3 days. Fewer patients were discharged to a facility (18%) or readmitted (7%). Home health and outpatient PT were utilized in 56% and 47% of cases, respectively. Inpatient costs represented 84.0% of the total episode cost.

DISCUSSION AND CONCLUSION:

Episode-of-care costs in TJA differ markedly based on complication severity. DRG 469 cases incurred higher total costs, driven by longer inpatient stays, more frequent readmissions, and greater post-acute care utilization. Conversely, DRG 470 episodes were more cost-efficient, with shorter stays and less intensive post-discharge needs. These findings highlight key targets for cost containment and quality improvement in bundled payment models for joint arthroplasty.

