

# Early Return to the Operating Room following Total Joint Arthroplasty in the Medicare Population & Patient Characteristics and Associated Costs

Austin Camron Kaidi, Jennifer Bido<sup>1</sup>, Luke Gregory Menken, Samuel Rodriguez<sup>1</sup>, Elizabeth Gausden, Jose A Rodriguez<sup>1</sup>  
<sup>1</sup>Hospital For Special Surgery

**INTRODUCTION:** The Center for Medicare and Medicaid Services (CMS) recently instituted bundled care payments for total joint arthroplasty (TJA) reimbursements covering all operative and 90-day post-operative costs in a lump-sum payment. We identified the patient characteristics and costs associated with early return to the operating room (OR) after TJA.

**METHODS:**

This was a single-institution retrospective cohort study analyzing all patients who returned to OR within 90-days following uncomplicated primary total hip (THA) or knee arthroplasty (TKA) between 2013-2018. The CMS research identifiable files were used to identify the study cohort, collect demographics and perioperative data. Patients who underwent primary TJA for fracture, malignant neoplasm, and removal of prior hardware (plates and screws, IMN, UKA, and hip resurfacing) were excluded. Mean total readmission billing claims was calculated to determine cost of early return to OR.

**RESULTS:**

Out of 20,803 primary TJA patients we identified 129 patients (0.6%) who returned to the operating room (Table 1). Mean time to re-operation was 37.3 days (95% CI: 32.8-41.2) after primary TJA. Periprosthetic fracture was the most common indication for return to OR (41%) followed by instability (35%) and prosthetic joint infection (PJI) (11%) (Table 2). Early return to OR was associated with a mean \$99,209 (95% CI \$89,657-\$108,771) reimbursement for the inpatient stay.

**DISCUSSION AND CONCLUSION:**

The most common causes for early return to the OR following primary TJA in this cohort were periprosthetic fractures, instability, and PJI. Early return to the OR was associated with a mean increase in cost by \$99,209 for the inpatient stay alone. In the Medicare population greater efforts should be made to reduce the incidence of early periprosthetic fractures and instability.

Mean Age, n (range)	74 (46-96)
Females, n (%)	77 (58)
Initial Procedure	
THA, n (%)	117 (91)
TKA, n (%)	12 (9)
Race	
White, n (%)	119 (92)
Black, n (%)	6 (5)
Hispanic, n (%)	1 (1)
Other, n (%)	2 (2)
Unknown, n (%)	1 (1)
Residency State	
Arizona, n (%)	1 (1)
Connecticut, n (%)	8 (46)
Florida, n (%)	7 (5)
Massachusetts, n (%)	1 (1)
New Jersey, n (%)	26 (20)
New York, n (%)	83 (64)
Ohio, n (%)	1 (1)
Pennsylvania, n (%)	1 (1)
West Virginia, n (%)	1 (1)

Admission Type	
Elective, n (%)	53 (41)
Urgent, n (%)	44 (34)
Emergent, n (%)	32 (25)
Admission Diagnosis	
Periprosthetic Fracture, n (%)	53 (41)
Instability, n (%)	45 (35)
Periprosthetic Joint Infection, n (%)	14 (11)
Loosening, n (%)	6 (5)
Osteolysis, n (%)	1 (1)
Arthrofibrosis, n (%)	1 (1)
Other, n (%)	9 (7)
Patient Comorbidities/Complications	
No Comorbidities/Complications, n (%)	15 (12)
Comorbidities/Complications, n (%)	91 (71)
Major Comorbidities/Complications, n (%)	23 (18)
Mean Time to Readmission (POD#), n (95% CI)	37.3 (32.8-41.2)
Mean LOS (days), n (95% CI)	6.3 (5.4-7.2)
Mean Cost (\$), n (95% CI)	99,209 (89,647-108,771)
Discharge Disposition	
Home, n (%)	9 (7)
Home w/ Services, n (%)	57 (44)
SNF, n (%)	38 (29)
ARF, n (%)	31 (24)
Discharge to Other Hospital, n (%)	4 (3)