

The Removal of Total Hip Arthroplasty from the Inpatient-Only List has Required an Expansion of Patient Optimization Efforts without Impacting Short-Term Outcomes

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INTRODUCTION: On 1/1/2020, the Centers for Medicare and Medicaid Services removed total hip arthroplasty (THA) from the Inpatient-Only (IPO) list. This expanded outpatient THA to include patients with insurance coverage through Medicare and Medicaid, a population that is typically older with increased medical comorbidities. This study evaluated patient factors, preoperative optimization, and short-term outcomes of patients undergoing outpatient THA pre- and post-removal from the IPO list. The authors hypothesized that patients undergoing THA post-IPO removal would have improved optimization of modifiable risk factors and equivalent short-term outcomes.

METHODS:

Outpatient THA in the National Surgical Quality Improvement Program database were stratified by surgical year. Demographics, comorbidities and short-term outcomes were compared with univariate and multivariable analysis. Using known parameters, preoperative thresholds were established for the following modifiable risk factors: albumin, creatinine, hematocrit, sodium, smoking history, and body mass index (BMI). The percentage of patients who fell outside the thresholds in each cohort were compared with univariate analysis.

RESULTS:

A total of 17,063 patients underwent outpatient THA from 2015 to 2020 (5,239 pre- and 11,824 post-IPO removal). Patients undergoing outpatient THA post-IPO removal were significantly older (64.6 vs. 61.8; p<0.01) There was no difference in 30-day readmissions (1.3% vs. 1.2%; p=0.57) or reoperation (2.4% vs. 2.4%; p=1.00). Multivariable analysis demonstrated that age, smoking, hypertension, and steroid use were predictors for 30-day readmission. ASA class four, diabetes, smoking, and steroid use were predictors of 30-day reoperation. A lower percentage of patients fell outside the established threshold for hematocrit, albumin, and smoking history, and this was significant for albumin (4.2% vs. 2.6%; p<0.01).

DISCUSSION AND CONCLUSION: While removal of THA from the IPO list expanded patient selection for outpatient arthroplasty, surgeons have continued to improve preoperative optimization efforts. Preoperative optimization is critical to minimize postoperative complications, and the current dataset demonstrates short-term outcomes have not worsened post-IPO removal. This work highlighted the efforts that surgeons now make to optimize an enlarging pool of patients with increasing complexity. These findings support the ongoing efforts to develop and implement coding options to allow for reimbursement related to optimization.

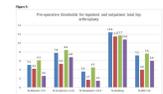
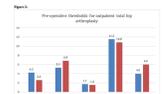
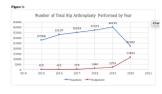


Table 1: Demographic characteristics of patients who underwent total hip arthroplasty from 2015-2020

Characteristic	Pre-IPO (n=5,239)	Post-IPO (n=11,824)
Age (mean)	61.8	64.6
Female (%)	~65	~65
White (%)	~75	~75
Medicaid (%)	~15	~15
Medicare (%)	~85	~85
ASA Class 4 (%)	~10	~10
Diabetes (%)	~15	~15
Smoking (%)	~10	~10
Steroid use (%)	~5	~5

Table 2: Comparison of demographic, patient, and preoperative laboratory values in patients who underwent total hip arthroplasty from 2015-2020

Variable	Pre-IPO	Post-IPO
Age	61.8	64.6
Female	65.2	65.1
White	75.1	75.3
Medicaid	15.2	15.1
Medicare	84.8	84.9
ASA Class 4	10.1	10.2
Diabetes	15.3	15.2
Smoking	10.2	10.1
Steroid use	5.1	5.2

Table 3: Comparison of demographic, patient, and preoperative laboratory values in patients who underwent total hip arthroplasty from 2015-2020

Variable	Pre-IPO	Post-IPO
Albumin	4.2%	2.6%
Creatinine	1.5%	1.5%
Hematocrit	1.5%	1.5%
Sodium	1.5%	1.5%
Smoking history	1.5%	1.5%
BMI	1.5%	1.5%

Table 4: Multivariate analysis of 30-day readmission and reoperation

Variable	Readmission (OR)	Reoperation (OR)
Age	1.02	1.01
Smoking	1.15	1.12
Hypertension	1.10	1.08
Steroid use	1.12	1.10
ASA Class 4	1.15	1.18
Diabetes	1.10	1.12