Outpatient vs. Inpatient Designation in Total Hip Arthroplasty: Can We Predict Who Will Require Hospitalization?

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INTRODUCTION:

Following removal of total hip arthroplasty (THA) from the inpatient only (IPO) list, arthroplasty surgeons face increased pressure to perform procedures on an outpatient (OP) basis. This has led to challenges in postoperative management. The purpose of the present study was to 1) evaluate patients booked for THA as OP who required conversion to inpatient (IP) status postoperatively and compare them against patients who were booked and remained OP; and 2) identify which factors were predictive of conversion from OP to IP status.

METHODS:

This was a retrospective review of all patients who underwent primary THA between January 2020 and April 2022. All patients were initially designated for OP surgery at their preoperative office visit, and were further stratified based on whether they were converted to IP status postoperatively or not. Perioperative variables were assessed for significance using multiple regression analysis while controlling for all covariates. Binary logistic regression determined predictors of conversion from OP to IP status.

RESULTS:

Of the 1,937 patients, 372 (19.2%) designated as OP stayed two midnights or longer. Patients within the IP group had significantly higher facility discharge rate (IP: 13.2% vs OP: 0.4%; p<0.001) and 90-day readmission rate (IP: 4.0% vs OP: 1.7%; p=0.024). Patients 65 years of age and older (p<0.001) and patients discharged from the operating room after noon (p<0.001) were twice as likely to require conversion to IP designation. Being the first case of the day (p<0.001) and being married (p<0.001) were protective against conversion.

DISCUSSION AND CONCLUSION:

Patients requiring conversion to IP status had significantly higher facility discharge and 90-day readmission rates. Several variables were identified that could help determine appropriate status at the time of surgical booking and ultimately avoid insurance claim denials.

Table 1. Demographics

	Outpatient Only (n=1565)	Outpatient to Inpatient (n=372)	P-Value
Age (years, ± SD)	64.95 ± 8.12	68.91 ± 9.17	<0.001
Sex			<0.001
Male	719 (45.9%)	125 (33.6%)	
Female	846 (54.1%)	247 (66.4%)	
First Case	789 (50.4%)	122 (32.8%)	<0.001
Race			0.028
White	1215 (77.6%)	265 (71.2%)	
Black or African American	170 (10.9%)	54 (14.5%)	
Asian	31 (2.0%)	5 (1.3%)	
Other	149 (9.5%)	48 (12.9%)	
Marital Status			0.001
Single	486 (31.1%)	159 (42.7%)	
Married	924 (59.0%)	174 (46.8%)	
Divorced	155 (9.9%)	39 (10.5%)	
Smoking Status			0.727
Never Smoker	863 (55.1%)	198 (53.2%)	
Former Smoker	606 (38.7%)	148 (39.8%)	
Current Smoker	96 (6.1%)	26 (7.0%)	
Surgical Time (minutes, ± SD)	107.99 ± 25.07	119.71 ± 31.10	<0.001
BMI (kg/m², ± SD)	28.84 ± 5.58	30.22 ± 6.21	<0.001
CCI (± SD)	0.98 ± 1.64	1.37 ± 2.03	0.001
OR Discharge			<0.001
Before Noon	759 (48.5%)	104 (28.0%)	
After Noon	806 (51.5%)	268 (72.0%)	

Table 2. Comparison of Perioperative Data Based on Designation

	Outpatient Only (n=1565)	Outpatient to Inpatient (n=372)	P-Value
Length of Stay (days, ± SD)	0.90 ± 1.04	2.77 ± 1.62	<0.001
Facility Discharge	0.4%	13.2%	<0.001
90-Day Readmission Rate	1.7%	4.0%	0.024
1 Year Revision Rate	1.3%	2.2%	0.299

Table 3. Predictors of Conversion from Outpatient to Inpatient Designation

	P-Value	Odds Ratio	Confidence Interval
Age 65 and Older	<0.001	2.018	1.589 to 2.563
Female Sex	<0.001	1.679	1.325 to 2.128
OR Discharge Past Noon	<0.001	2.427	1.895 to 3.107
First Case	<0.001	0.480	0.378 to 0.609
Race			
Black or African American	0.027	1.456	1.043 to 2.033
Asian	0.535	0.740	0.285 to 1.920
Other	0.030	1.477	1.039 to 2.099
Marital Status			
Married	<0.001	0.576	0.452 to 0.733
Divorced	0.192	0.769	0.519 to 1.141
BMI > 30	0.001	1.448	1.154 to 1.818
CCI ≥ 4	0.013	1.628	1.107 to 2.396