

# Impact of Charity Care Financial Assistance on 90-Day Postoperative Outcomes Following Total Joint Arthroplasty

Owen Scott Roth, Bill Young, Arthur McDowell<sup>1</sup>, Paul A Manner<sup>2</sup>, Navin Fernando, Nicholas Hernandez<sup>3</sup>

<sup>1</sup>UW Orthopedics & Sports Medicine, <sup>2</sup>Univ of WA, <sup>3</sup>University of Washington

## INTRODUCTION:

Total joint arthroplasty (TJA) typically yields favorable postoperative outcomes, however studies examining outcomes in patients with significant socioeconomic limitations remain limited. This study investigates 90-day outcomes in recipients of charity care financial assistance undergoing TJA.

## METHODS:

A retrospective review was performed for patients undergoing primary TJA from 2003–2022 at a single academic institution. Patients with major financial limitations could qualify for charity care. 312 (THA: 146, TKA: 174) charity care patients over the study period were identified and matched 1:3 with 936 control patients (THA: 461, TKA: 475) based on age, sex, body mass index (BMI), Charlson Comorbidity Index (CCI), and calendar year. In the charity care group, the mean age was 58.3, BMI 31.3 kg/m<sup>2</sup>, CCI 0.84, and 57.3% were female while the control group had a mean age of 58.8, BMI 31.1 kg/m<sup>2</sup>, CCI 0.80, and 58.1% female. Outcomes included 90-day readmission, reoperation, emergency department (ED) visitation, length of stay (LOS), discharge disposition, and cumulative post-operative complications. Multivariable logistic and linear regressions were used to compare categorical outcomes and continuous variables, respectively.

## RESULTS:

At 90-days, patients receiving charity care had significantly higher rates of readmission (10.9% [charity care] vs 2.3% [controls], OR 4.98, 95% CI:2.88-8.58, p<0.001), reoperation, (4.4% vs 2.1%, OR 2.12, 95% CI:1.07-4.17, p=0.035), ED visitation (14.6% vs 1.9%, OR 8.66, 95% CI:5.01-14.98, p<0.001), discharge to a skilled nursing facility (7.3% vs 2.8%, OR 2.73, 95% CI:1.54-4.84, p<0.001), and cumulative medical and surgical complications (10.7% vs 2.5%, OR 4.50, 95% CI:2.63-7.68, p<0.001). LOS was not significantly different between groups (2.59 days vs 2.14 days, OR 1.53, 95% CI:0.99-2.37, p=0.053).

## DISCUSSION AND CONCLUSION:

Patients receiving charity care exhibited significantly worse 90-day postoperative outcomes following primary TJA compared to a matched control group. Future studies are warranted to investigate interventions that improve postoperative outcomes following TJA in this vulnerable population.

**Table 1. Odds Ratios and Significance Levels for 90-day Postoperative Outcomes in Charity Care Patients Following Total Joint Arthroplasty.**

	<b>Odds Ratio (95% CI)</b>	<b>p-value</b>
<b>SNF Discharge</b>	2.73 (1.54, 4.84)	<0.001
<b>Readmission</b>	4.98 (2.88, 8.58)	<0.001
<b>Reoperation</b>	2.12 (1.07, 4.17)	0.035
<b>ED Visit</b>	8.66 (5.01, 14.98)	<0.001
<b>Length of Stay</b>	1.53 (0.99, 2.37)	0.053
<b>All complications*</b>	4.50 (2.63, 7.68)	<0.001
<b>Surgical complications*</b>	3.29 (1.65, 6.55)	<0.001
<b>Medical complications*</b>	10.84 (3.56, 32.99)	<0.001
* All complications are 90-day mortality, MUA, PJI, periprosthetic joint fracture, dislocation, DAIR, reoperation, stroke, ARDS, UTI, DVT, PE, AMS, and other.		
* Surgical complications are 90-day MUA, PJI, periprosthetic joint fracture, dislocation, DAIR, and reoperations besides DAIR.		
* Medical complications are 90-day mortality, stroke, ARDS, UTI, DVT, PE, AMS, and other.		