

**Is Preoperative Emergency Department Utilization Associated with Postoperative Healthcare Utilization After Total Joint Arthroplasty? A Social Vulnerability Index Based Analysis.**

**ABSTRACT**

*Background:* As the need for total joint replacement increases with an aging population, there is increased attention to perioperative healthcare utilization. Efforts to mitigate complexity which may lead to deviations from successful surgical outcomes are critical, now more than ever.

Analysis of predictive variables associated with increased healthcare utilization postoperatively can aid the effort to decrease emergency department (ED) visits and overall burden to the healthcare system.

*Methods:* A retrospective review was completed of all patients with total knee or total hip arthroplasty between 2017 and 2020 at a single institution. Inclusion criteria were patients who underwent primary, elective total knee or hip arthroplasty and received a minimum of one year follow up. Zip code was used to determine the social vulnerability index (SVI) for each patient. Preoperative ED visits were collected for 90 days and 12 months prior to surgery. Postoperative outcomes collected included postoperative ED visits, readmission, periprosthetic joint infection (PJI), revision surgery/reoperation, and mortality.

*Results:* There were 1059 patients included, 193 with an ED visit 12 months prior to surgery and 45 with an ED visit 90 days prior to surgery with an average SVI of 0.50. Analysis of the postoperative outcomes demonstrated 104 patients with ED visits within 90 days following the procedure. Comparisons between SVI and all preoperative and postoperative variables demonstrated no statistical significance. Preoperative ED visit within 90 days or 12 months of

surgery was associated with increased likelihood of postoperative ED visit within 90 days ( $p<0.001$ , OR 4.64;  $p<0.001$ , OR 3.78). Preoperative ED visit within 90 days or 12 months was also associated with increased risk of readmission ( $p=0.008$ , OR 6.09;  $p=0.005$ , OR 3.80) and revision surgery or reoperation ( $p=0.039$ , OR 3.57;  $p=0.041$ , OR 2.20).

*Conclusion:* Preoperative ED visit within 90 days or 12 months prior to surgery is a strong predictor of postoperative ED visit, readmission, and overall perioperative healthcare utilization regardless of socioeconomic factors.