

Patient characteristics, discharge disposition, and hospital factors associated  
with all cause 30-day hospital readmission for total joint arthroplasty

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### **Abstract**

**Objective:** Recent improvements in hospital care have come from a growing knowledge of factors that contribute to readmission. The objective of this work is to identify and describe the national readmission rate after Total Joint Arthroplasty, and to evaluate selected hospitals' and patients' factors for their association with the all-cause 30-day readmission rate after TJA in the United States in 2014.

**Method:** Retrospective analysis of 938,504 TJA acute care hospital discharge records was performed, using a nationally representative database that is dedicated to the study of hospital readmissions, and accounts for 51% of total US hospitalizations. Logistic regression models were used to analyze patient characteristics, discharge disposition, and hospital factors associated with all-cause 30-day hospital readmission.

**Results:** The national rate of 30-day readmissions after TJA was 4%. A patient's age, gender, type of insurance, discharge destination, and DRG severity were all significantly associated with readmission, at ( $p < 0.0001$ ). Female patients had a 22% lower risk of readmission than the males. Patients who had Medicare as the primary payer had 34% higher risk, and those with Medicaid had a 74 % higher risk, while patients with other types of insurance, such as worker's compensation or other government programs, were at a 27% higher risk for readmission when compared to patients with commercial insurance. Patients discharged to a skilled nursing or intermediate care facility had a 61% higher risk for hospital readmission, while those who were discharged to home health-

care services had a 10% higher risk for readmission when compared to patients discharged to home with no further medical services. TJA patients discharged home tend to have the lowest rates of 30-day readmission. Additionally, patients who receive post-acute care services at home are less likely to be readmitted to the hospital compared with those who receive post-acute care at inpatient settings, such as skilled nursing or intermediate care facilities.

**Discussion:** Studying risk factors associated with hospital readmissions, potential interventions, and related measurements is important to create effective programs that improve patient clinical outcomes, and design fair adjusted payment incentives that favorably affect healthcare cost and quality of care. Adjusting risk to account for patient characteristics, hospital factors, and post-acute care is essential for designing provider incentives that reduce hospital readmission and avoid unintended consequences. Also, a stratification of patients can be used to identify those at higher risk of readmission so that a greater intensity of intervention can be used to avoid readmissions.

**Key Words:** Readmissions, Rehospitalizations, Total Joint Arthroplasty, Comprehensive Care for Joint Replacement Model (CJR), Care Transition.