

# **Disparities in Post-Operative Outcomes: Race and Insurance Status as Predictors of Hospital Return and Readmission After Orthopaedic Trauma Surgery**

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## **INTRODUCTION:**

Investigating healthcare disparities, particularly in hospital return and readmission rates after orthopaedic trauma surgery, is critical for improving outcomes and achieving equity in care. This study examined the influence of race and insurance status on such disparities within a tertiary academic healthcare system.

## **METHODS:**

In this retrospective cohort study, we analyzed adult patients had undergone orthopaedic trauma surgery at a level 1 academic hospital system. Our primary outcomes included return and readmission to the hospital at 7, 30, 90 days after surgery. We built separate multivariable regressions examining the association of race and insurance status with each outcome. Each model controlled for co-morbidities, demographics, patient distance to the hospital and complexity of primary procedure. Exponentiated regression coefficients were interpreted as odds ratios (ORs) of return or readmission. Statistical significance was assessed at  $\alpha=0.0001$ .

**RESULTS:** The analysis included 10,637 patients. Black patients exhibited higher rates of hospital return at all time points (OR = 1.42,  $p=0.002$ ; OR = 1.33,  $p<0.001$ ; OR = 1.3,  $p<0.001$  for 7, 30 and 90 days respectively) when compared to their non-Black counterparts. However, these patients did not exhibit higher readmission rates at the same time points (OR = 1.1,  $p = 0.6$ ; OR = 1.1,  $p = 0.4$ ; OR = 1.06,  $p = 0.4$  for 7, 30 and 90 days respectively). Conversely, patients with Medicare or Medicaid insurance exhibited higher rates of return rates (OR = 2.15,  $p<0.001$ ; OR = 2.31,  $p<0.001$ ; OR = 2.44,  $p<0.001$  for 7, 30 and 90 days respectively) and readmission rates (OR = 1.42,  $p<0.001$ ; OR = 1.33,  $p<0.001$ ; OR = 1.3,  $p<0.001$  for 7, 30 and 90 days respectively).

## **DISCUSSION AND CONCLUSION:**

The patterns observed in this study suggest that Black patients and patients covered by public health insurance may face unique challenges after orthopaedic trauma surgery, leading to increased hospital returns. These challenges could include insufficient primary care access and barriers to follow-up care, possibly exacerbated by a lack of culturally competent healthcare practices. Future research should further investigate these factors and test interventions designed to reduce the identified disparities.