

Epidemiology of Unhoused Orthopedic Trauma Patients Presenting to a Metropolitan Level 1 Trauma Center

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INTRODUCTION: A gap in evidence exists regarding the prevalence of adverse events after operative treatment of appendicular fractures in unhoused patients which hinders surgeon ability to weigh risks and benefits of surgical intervention.

METHODS: We prospectively identified patient's housing status via direct question during ED orthopaedic trauma consultations at a metropolitan level 1 trauma center from January to April 2024. EMRs were queried to determine follow-up in the six-months post-intervention. Primary response variable was unplanned return to the operating room. Explanatory variables included: age, race, sex, mechanism, polytrauma, recidivist status, medical and psychosocial comorbidities, length of stay, and discharge location. Demographic characteristics were described as means with standard deviations for continuous variables. Frequencies were calculated for categorical variables.

RESULTS: A total of 47 unhoused patients were identified with mean age 48 +/- 12 years. The most common injury mechanism was auto vs pedestrian (40%), 68% had an isolated appendicular fracture, and 31% were trauma recidivists. 81% of patients reported tobacco use, 45% reported daily alcohol use, and 53% reported active intravenous drug use. Documented psychiatric illness was present in 36%. Operative management was chosen in 79% of patients, which represented 18% of total inpatient surgical cases during the study period, with 46% undergoing open reduction internal fixation with plate/screw constructs, 30% undergoing intramedullary nail, and 38% undergoing irrigation and debridement. Unplanned return to the operating room occurred in 28% of patients and 25% had culture positive infection, of which 58% were staphylococcus (42% MRSA) and 25% streptococcus. Of those that had an unplanned return to the operating room, 36% were initially open fractures. Unplanned return to the operating room occurred with one distal femur fracture, two tibial plateau fractures, three tibial shaft fractures, one patella fracture, one proximal humerus, two prepatellar bursa and one chronic shoulder dislocation. Mean length of stay was 8 +/- 11 days and 60% were discharged home. Mean ED follow ups was 1.3 +/- 2.2 visits, compared to 1.0 +/- 1.4 clinic visits, and mean follow up duration was 30 +/- 32 days. There was no documented follow up in 28% of patients.

DISCUSSION AND CONCLUSION: Significant psychosocial comorbidities in unhoused orthopaedic trauma patients contribute to increased rates of re-presentation to the ED and unplanned return to the operating room. Systems-based changes are required to identify this patient population, better characterize their injuries and comorbidities, and re-think interventions that minimize individual and societal complications.