

## Disparities in Access To and Use of Surgical Care for AO/OTA 44B2 Unstable Bimalleolar Ankle Fractures

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**Purpose:** Disparities exist in access to and use of orthopaedic care. Unstable ankle fractures are a common orthopaedic injury for which surgical care improves outcomes. We sought to identify disparities in access to and use of surgical care for unstable ankle fractures at a public safety net trauma center.

**Methods:** Ambulatory adults with unilateral AO/OTA 44B2 unstable bimalleolar ankle fractures presenting to an urban level 1 trauma center from January 2016 to February 2020 were identified from a registry and confirmed by radiograph review. Patient characteristics including age, sex, language, ethnicity, housing status, employment status, and substance use were abstracted from medical records. Access to surgical care was quantified by time from injury to presentation, whether surgery was offered, whether the patient agreed to surgery, and time from presentation to surgery. Associations between access to surgical care and patient characteristics were assessed by multivariable regression analysis.

**Results:** 1116 patients were screened. 323 eligible injuries were confirmed by radiographs. Median days to presentation was 2 (IQR 1-5) days from injury. Multivariable regression identified statistically significant delays to presentation for Hispanic patients ( $\beta = .682$ , 95% CI [0.19,1.18]), non-English speakers ( $\beta = .44$ , 95% CI [0.11,0.762]), and patients reporting illicit drug use ( $\beta = 1.20$ , 95% CI [0.43,1.97]). 84.8% of patients were offered surgery. 78.8% of patients offered surgery elected to proceed. Homelessness was associated with significantly decreased odds for being offered surgery (OR = 1.52, 95% CI [0.03,0.70]). Black self-identification ( $\beta = .121$ , 95% CI [0.05,1.23]) was significantly associated with declining surgery when offered. Median time from presentation to surgery was 9.5 days (IQR 7-14). Homelessness ( $\beta = 11.10$ , 95% CI 0.27,21.93) and illicit drug use ( $\beta = 5.73$ , 95% CI [1.27,10.20]) were significantly associated with delays from presentation to surgery.

**Conclusion:** We identified disparities in access to and use of surgical care for unstable AO/OTA 44B2 unstable bimalleolar ankle fractures negatively affecting Hispanic, Black, non-English speaking, homeless, and illicit drug-using patients. Further study of barriers to access and attitudes toward surgical care, particularly among Hispanic and Black patients, will inform outreach strategies to remedy these disparities.

**Significance/Clinical Relevance:** Disparities in access to and utilization of surgical care may delay appropriate definitive treatment and lead to poorer outcomes in at-risk populations. This may lead to undue clinical and financial burden for both the patient and care-providing institution.