The Costs of Operative Fixation for Ankle Fractures: A Multi-Center Retrospective Comparison of Inpatient and Outpatient Surgery  
Geoffrey Phillips, MD, Drew Stal, MD, Rachel Chernet, Zohair Saquib, BA

Category: Ankle

Keywords: Ankle Fracture Fixation, Cost Analysis, Inpatient and Outpatient Surgery

Introduction/Purpose: One of the emerging trends in contemporary healthcare is the shift in surgical resources to the outpatient setting coupled with institutional focus of reducing inpatient length of stay to facilitate cost containment. Through a multi-center retrospective review of operatively treated ankle fractures, we sought to calculate the actual financial cost of each procedure as well as to compare the economics of performing outpatient versus inpatient surgery. Additionally, we sought to determine whether the surgery location (inpatient and outpatient) was associated with specific patient demographics, medical co-morbidities, or surgeon practice patterns.

Methods: A multi-center retrospective comparative study of 240 surgically treated ankle fractures over a two-year period was performed. Two tertiary care hospitals and their affiliated ambulatory surgery centers were included in the study. Patient selection was based on Current Procedural Terminology codes while exclusion criteria included pediatric patient, open trauma, distal tibia pilon fracture, or history of prior ankle fracture. The total direct cost of each surgery was calculated including categorized charges for room and board, pharmacy, rehabilitation, radiology, surgical implant materials, and surgeon professional fees. Patient age, medical co-morbidities, presence of poly-trauma, ordering of ankle CT-scan, and fellowship training of the orthopaedic surgeon were also evaluated in the study. The chi-square test or Fisher’s exact test was used to compare inpatients and outpatients for each variable.

Results: 142 inpatient and 98 outpatient ankle fracture surgeries were performed. Median length of stay was 5 days for inpatients and the mean total direct cost was $11,466 for each inpatient case with room and board charges averaging $2,694. The mean total direct cost for each outpatient procedure was $3,111. Regarding patient demographics, statistically significant higher percentages were recorded among inpatients in the following groups: age 65 years or older (p < 0.0003), hypertension (p < 0.0230), presence of poly-trauma (p < 0.0149) and ordering of ankle CT-scan (p < 0.0001). 84% of ankle fracture surgeries performed by foot and ankle surgeons were outpatient procedures while 71% of ankle fracture surgeries performed by orthopaedic trauma surgeons were inpatient procedures.

Conclusion: Our data shows that with a 5 day median length of stay for the hospitalized patient group, the average total cost for inpatient ankle fracture surgery was nearly four times higher and $8,000 more than the total cost for outpatient ankle fracture surgery. Increased patient age and other specific medical co-morbidities were statistically linked with inpatient admission. In this multi-center study, foot and ankle surgeons were more likely than trauma surgeons to perform outpatient ankle fracture surgery. Healthcare institutions may realize substantial practice management cost savings by shifting ankle fracture surgery to the outpatient setting.