

Factors for Increased Hospital Stay and Utilization of Post-Acute Care Facilities in Geriatric Orthopaedic Fracture Patients

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Purpose: The treatment of geriatric fractures requires a considerable amount of both hospital and post-acute care resources. This study aims to determine the extent of utilization of health-care resources in the geriatric fracture population and to identify factors associated with burden on resources.

Methods: This is a retrospective study of 1074 patients ≥ 65 years admitted to an orthopaedic service for a long bone fracture between July 2014 and June 2015. Outcomes were hospital length of stay (LOS), discharge disposition, and post-acute care facility LOS. Secondly, readmission rates and mortality were assessed. Multivariable regression analyses were performed to identify factors associated with utilization.

Results: Prior to injury, 96% of patients lived at home and 50% ambulated independently. Median hospital LOS was 5 days (interquartile range [IQR], 3-7). 878 patients were discharged to a rehabilitation facility, with 45% being discharged < 20 days. 10% of patients ($n = 108$) were readmitted < 90 days of their discharge. 924 patients were still alive 1 year after the injury. Higher Charlson Comorbidity Index (CCI) ($P = 0.048$), male sex ($P < 0.001$), preinjury use of an ambulatory device ($P = 0.006$), and undergoing surgical treatment ($P < 0.001$) were associated with longer hospital LOS, low-energy mechanism of injury ($P = 0.001$) and having a fracture of the upper extremity ($P = 0.001$) were associated with shorter LOS. An upper extremity fracture was associated with an increased odds ratio (OR) of being discharged home (OR 10.2, 95% confidence interval [CI] 5.7-18.2; $P < 0.001$), older age ($P < 0.001$), preinjury ambulatory device ($P = 0.001$), and surgery ($P = 0.012$) were risk factors for requiring discharge to another inpatient facility. Older age ($P < 0.001$), preinjury ambulatory aid ($P < 0.001$), and preexisting immobility ($P < 0.001$) were independent risk factors for LOS > 20 days in a rehabilitation facility. Discharge home was not found to be associated with an increase in 1-year mortality after adjusting for age, CCI, sex, fracture location, and surgery ($P = 0.727$). Shorter LOS in rehabilitation facilities (< 20 days) was also not associated with an increase in 1-year mortality ($P = 0.520$).

Conclusion: Elderly orthopaedic fracture patients utilize a significant amount of post-acute care resources and age, CCI, surgery, fracture location, preinjury ambulatory status, and preinjury living status were found to be associated with the use of these resources.