

Does Admission to Medicine or Orthopaedics Impact a Geriatric Hip Patient's Hospital Length of Stay?

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Background/Purpose: Due to our aging population, hospitals are treating more hip fracture patients each year. As the cost of treatment for hip fractures continues to rise, hospitals must find avenues to contain costs while maintaining quality care. Given that prolonged hospital length of stay (LOS) is a major driver of cost, it has been hypothesized that admission to the medicine service as compared to orthopaedics could decrease LOS for geriatric hip fracture patients. The purpose of our study was to determine if LOS for geriatric hip fracture patients was significantly impacted by admission to the medicine service or orthopaedic service.

Methods: A retrospective cohort of all patients presenting with a low-energy geriatric hip fracture at a Level I trauma center from January 2000 to December 2009 were identified using CPT codes. Data were collected on patient demographics, medical comorbidities, length of hospitalization, and admitting service. Bivariate analyses using the chi-squared test and Wilcoxon Mann-Whitney test were performed to compare risk factors between patients admitted to the medicine or orthopaedic service. A negative binomial regression model controlling for several important patient factors, such as American Society of Anesthesiologists (ASA) score and individual patient comorbidities, were used to evaluate hospital LOS after surgery.

Results: 614 geriatric hip fracture patients were included in the analysis, of which 49.2% (n = 302) were admitted to the orthopaedic service and 50.8% (n = 312) were admitted to medicine. The average LOS for patients admitted to orthopaedics was 4.5 days compared to 7 days for patients admitted to medicine (P < 0.0001) (Figure 1). As shown in Table 1, patients admitted to orthopaedics were younger in age compared to those admitted to medicine and presented with a significantly lower range of ASA scores (P < 0.0001). Readmission was also significantly higher for patients admitted to medicine (n = 92, 29.8%) compared to orthopaedics (n = 70, 23.1%). After controlling for individual patient factors, it was determined that medicine patients are expected to stay about 1.5 times (IRR 1.48, P < 0.0001) longer in the hospital than orthopaedic patients.

Conclusion: This is the first study to demonstrate that admission to medicine compared to orthopaedics for geriatric hip fractures increases a patient's expected LOS after controlling for confounding factors. Since LOS is a major driver of cost as well as a measure of quality care, it is important to understand the factors that lead to a longer hospital stay to better allocate hospital resources. Orthopaedic surgeons should be aware that admission to medicine increases the patient's expected length of stay.

Figure 1. Average LOS for Patients Admitted to Medicine or Orthopaedics

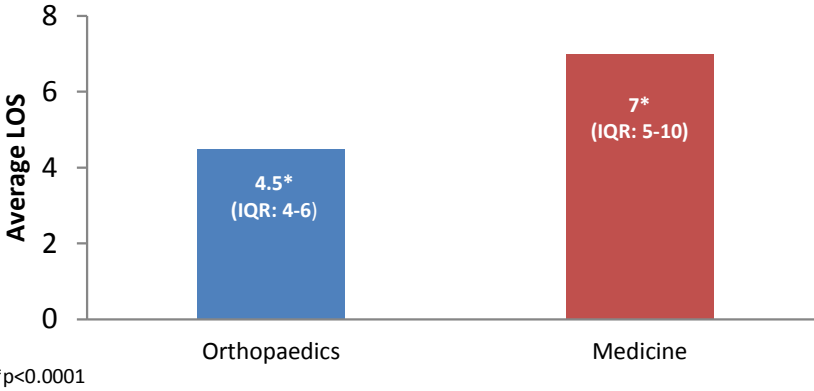


Table 1. Characteristics for Patients Admitted to Medicine and Orthopaedics

| | Orthopaedics (49.2%, N=302) | Medicine (50.8%, N=312) | p-value |
|-------------------------|--|------------------------------------|----------------|
| Age (Mean, IQR) | 77.5 (70-85) | 81 (71-86.25) | <0.0001 |
| Sex (N, %) | | | 0.0038 |
| Male | 82 (27.2%) | 120 (38.5%) | |
| Female | 220 (72.8%) | 192 (61.5%) | |
| ASA Score (N, %) | | | <0.0001 |
| 1 | 1 (0.3%) | 0 (0.0%) | |
| 2 | 44 (14.6%) | 14 (4.5%) | |
| 3 | 220 (72.8%) | 200 (64.1%) | |
| 4 | 37 (12.3%) | 96 (30.8%) | |
| 5 | 0 (0.0%) | 2 (0.6%) | |
| Readmission rate | 70 (23.1%) | 92 (29.8%) | 0.038 |

The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.