

**Length of Stay Following Geriatric Hip Fracture Surgery:
Do Physical Therapy Availability and Day of Surgery Matter?**

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Purpose: Management of geriatric hip fractures requires a multidisciplinary approach, and multiple factors impact hospital length of stay (LOS) after surgery. Day of surgery and availability of physical therapy (PT) have been shown to be independent predictors of LOS following total joint arthroplasty. The purpose of this study was to investigate the impact of day of surgery and postoperative PT sessions on LOS following hip fracture surgery.

Methods: We performed a retrospective analysis of all surgically treated geriatric hip fractures (age >60 years) at a Level-I trauma center over a 2-year period. The primary outcome variable was hospital LOS. Patient demographics, American Society of Anesthesiologists (ASA) scores, and medical comorbidities were recorded, as were surgical characteristics and day of the week of surgery. Hospital unit, admitting and discharging service, and number of PT sessions received in the first 3 postoperative days (PODs) were also recorded. All variables associated with hospital LOS were identified by Kruskal-Wallis tests. A multivariable negative binomial regression analysis was then performed to adjust for patient age and medical comorbidities.

Results: 315 geriatric hip fractures were identified, with an average age of 79.8 years. 71% of patients were female. On univariable analysis, LOS was significantly associated with day of surgery, ASA score, hospital unit, discharging service, discharge disposition, surgical procedure, and number of PT sessions during PODs 1-3. Results of the multivariable analysis are shown in Table 1. After adjustment, patients who had surgery Thursday/Friday/Saturday stayed in the hospital 15% longer than those who had surgery on another day (P = 0.02). Patients not seen by PT on the first 3 PODs stayed 2.37 times longer than patients seen all 3 days (P<0.001).

Conclusion: Day of surgery and availability of PT during the first 3 postoperative days significantly impact length of stay following geriatric hip fracture surgery.

Table 1: Multivariable Negative Binomial Regression for Length of Stay Following Geriatric Hip Fracture Surgery

Variable	Incidence Rate Ratio	95% Confidence Interval	P-value
Patient Age at Surgery (unit = 10 years)	0.93	0.88, 0.99	0.03
ASA Score (unit = 1 point)	1.18	1.07, 1.30	0.001
Discharge Service			<0.001
Orthopaedic Surgery		REF	
Medical Service	1.47	1.25, 1.73	<0.001
Other Surgical Service	0.99	0.61, 1.60	0.96
Trauma Surgery	1.26	0.97, 1.64	0.08
Discharge Disposition			<0.001
Home		REF	
Acute/Long-Term Acute Care Rehab	1.96	1.32, 2.92	<0.001
SNF/Swing Bed	1.87	1.39, 2.51	<0.001
Other	1.25	0.55, 2.83	0.59
Weekend Surgery (Thurs/Fri/Sat)	1.15	1.02, 1.29	0.02
Surgical Procedure			0.15
CMN		REF	
CRPP	0.82	0.67, 1.01	0.058
SHS	0.99	0.82, 1.19	0.88
Hemiarthroplasty	0.94	0.81, 1.08	0.36
Number of PT session within first 3 PODs			<0.001
0	2.37	1.48, 3.79	<0.001
1	0.84	0.70, 1.00	0.053
2	0.96	0.84, 1.11	0.60
3		REF	

*ASA: American Society of Anesthesiologists; SNF: Skilled Nursing Facility; CMN: Cephalo-Medullary Nail; CRPP: Closed Reduction Percutaneous Pinning; SHS: Sliding Hip Screw; PT: Physical Therapy; POD: Post-Operative Day

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.

POSTER ABSTRACTS