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

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Introduction

- Over 1.6 million hip fractures occur annually worldwide¹
- One year mortality following hip fracture is 14 to 58%²
- Annual U.S. economic burden \$17-20 billion³
- Total hospital cost for hip fracture fixation averages \$16,000 at academic hospitals; approximately 1/3 of hospital cost is attributable to room and board^{4,5}
- Accelerated rehab programs have been shown to decrease length of stay (LOS)⁶
- Day of surgery has been shown to significantly impact LOS in total joint arthroplasty⁷

Objectives

1. To determine the impact of day of surgery on LOS following hip fracture surgery
2. To determine the impact of post-operative physical therapy sessions on LOS

Methods

- Retrospective review of all surgically treated geriatric hip fractures (ages 60+) over a 2-year period
- **Inclusion:** Patients aged 60+ who underwent operative treatment for hip fracture (percutaneous screw fixation, sliding hip screw, cephalomedullary nail, or hemiarthroplasty)
- Variables analyzed: demographics, ASA score, comorbidities, day of surgery, hospital unit, admitting/discharging service, number of PT sessions during first 3 post-operative days (PODs), osteoporosis risk factors, bone health screening, and prior osteoporosis treatment

Results

- 315 patients (71% female)
- Average age 80 years
- On multivariable analysis, LOS was significantly associated with day of surgery, ASA score, day of surgery, discharging service, discharge disposition, and number of PT sessions within 3 days.

Variable	Incidence Rate Ratio	95% CI	P-value
Patient Age at Surgery	0.93	0.88, 0.99	0.03
ASA Score	1.18	1.07, 1.30	0.001
Discharge Service			<0.001
Medical Service	1.47	1.25, 1.73	<0.001
Orthopedic Surgery	REF		
Other Surgical Service	0.99	0.61, 1.60	0.96
Trauma Surgery	1.26	0.97, 1.64	0.08
Discharge Location			<0.001
Acute/Long-Term Acute Care Rehab	1.96	1.32, 2.92	<0.001
Home	REF		
Other	1.25	0.55, 2.83	0.59
SNF/Swing Bed	1.87	1.39, 2.51	<0.001
Weekend Surgery	1.15	1.02, 1.29	0.02
Procedure			0.15
CMN	REF		
CRPP	0.82	0.67, 1.01	0.058
DHS	0.99	0.82, 1.19	0.88
Hemiarthroplasty	0.94	0.81, 1.08	0.36
# of PT sessions within 3 post-operative days			<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		

Key Conclusions

- **Early post-operative physical therapy and day of surgery significantly impact length of stay (LOS) following hip fracture surgery**
- **Patients having surgery on Thu, Fri, or Sat stay 15% longer than patients having surgery Sun – Wed.**
- **Patients not seen by physical therapy during the first 3 post-op days stay 2.37x longer than patients seen PODs 1-3.**
- **Case management/discharge placement delay was the most common cause of longer LOS**

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