

Optimizing Comprehensive Care for the Hospitalized Hip Fracture Patients: Time to Surgery and Bone Health at Discharge

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Background: Approximately 300,000 older people (65 years and older) are hospitalized yearly for hip fractures, according to the CDC. Hip fracture is considered a life-altering event with increased morbidity and up to 30% mortality. The Clinical Practice Guidelines by the American Academy of Orthopedic Surgeons highlight the importance of an interdisciplinary team approach while caring for these patients and recommend surgery within 24 hours for improved outcomes. Most of these fractures are considered fragility fractures occurring from a simple ground-level fall and, thus, a manifestation of osteoporosis. Yet, only a few patients, 26%, receive osteoporosis treatment within 30 days of surgery, as per a recent study. ACP recommends replenishing Vitamin D and Calcium in all fragility fracture patients, followed by the initiation of bisphosphonates. At our institution, hip fracture patients used to be admitted to internal medicine or orthopedic services based on their complexity. There was a perceived feeling that those admitted to primarily internal medicine service received less comprehensive care and were likely delayed in getting to the OR given the competing priorities of a sick internal medicine service load. Vitamin D levels were not being checked or replaced despite having it be part of the admission order set used for hip fracture patients. Our project aimed at improving overall care for hospitalized hip fracture patients. Our goal was to increase the percentage of hospitalized hip fracture patients going to the operating room within 24 hours to 85% by the end of 2023. Additional goals were to improve the percentage of checking vitamin D levels and supplementing them at discharge by 25% by the end of 2023.

Methods: Our intervention was to build a fragility fracture orthopedic and internal medicine co-management service where hip fracture patients were admitted. We collected outcome, process, and balancing measures, including time to surgery, unnecessary cardiac testing and consultation before surgery, percentage of ordering vitamin-D levels, and vitamin-D supplementation at discharge. Qualitative satisfaction with the process was also included. Data was collected biweekly from Jan 2023 to Dec 2023. Run chart analysis was utilized for statistical analysis.

Results: Our results showed that the percentage of patients going to surgery within 24 hours did not differ (median of approximately 80%). Patients rarely got unnecessary cardiac testing or consultations, so we stopped following this measure. The median of vitamin-D level checking and supplementation at discharge had improved from 45% to 77% and 35% to 50%, respectively, sustaining a shift using run chart analysis rules.

Conclusions: Our project shows that establishing a dedicated service for hospitalized fragility hip fractures has improved care for our patients. While time to surgery had not improved, it had been within the reported national average. Time to surgery is being delayed mostly when further medical optimization is required. However, having this service improved bone-focused care with vitamin-D testing and supplementation. The future PDSA cycle will focus on post-discharge osteoporosis management and treatment when appropriate.