

## Implementation of a Multidisciplinary “Code Hip” Protocol Is Associated With Decreased Time to Surgery and Improved Patient Outcomes

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**Purpose:** The purpose of this study is to report outcomes data based on the implementation of a multidisciplinary “code hip” protocol at our Level-I trauma center. We hypothesized that implementation of our code hip protocol would decrease time from presentation to surgical intervention and improve outcomes based on short-term postoperative complications.

**Methods:** A retrospective chart review was performed on all patients with a hip fracture from October 2015 through June 2018. Implementation of our code hip protocol began in March 2017 and therefore we excluded all patients from March through June 2017 to allow for an adequate time for implementation of this protocol. All patients aged greater than 65 years, with a low-energy mechanism of injury that underwent subsequent operative treatment for femoral neck, intertrochanteric, or subtrochanteric hip fractures were included. In addition to demographic and patient factors we recorded time from presentation to surgery, types of surgical interventions performed, ability to ambulate in the postoperative period, and postoperative complications up to 90 days from surgery.

**Results:** There were 114 patients in the pre-code hip cohort with an average age of  $81.6 \pm 8.3$  years and 132 patients in the post-code hip cohort with an average age of  $80.8 \pm 8.1$  years. Demographic factors including gender, body mass index (BMI), and preoperative level of function were not different between the 2 cohorts. Fracture and fixation types were also similar. Time from presentation to surgery in the post-code hip cohort was shorter at  $23.1 \pm 16.4$  hours versus  $33.2 \pm 27.2$  hours ( $P = 0.0004$ ). 30.3% of patients in the post-code hip cohort had at least 1 postoperative complication compared to 42.1% in the pre-code hip cohort (relative risk [RR] = 0.72, confidence interval [CI] = 0.51-1.01,  $P = 0.05$ ). The post-code hip cohort had a significantly lower rate of hospital readmission ( $P = 0.04$ ), unplanned reoperation ( $P = 0.02$ ), surgical site infection ( $P = 0.03$ ), and sepsis ( $P = 0.05$ ). 75.8% of patients in the post-code hip cohort were able to ambulate a distance of greater than 5 feet within 72 hours of surgery compared to 60.5% in the pre-code hip cohort ( $P = 0.01$ ). Average length of hospitalization was shorter in the post-code hip cohort at 6.3 days compared to 5.7 days for the post-code hip cohort.

**Conclusion:** Implementation of our code hip protocol, which invokes a multidisciplinary approach to the elderly patient with a fragility hip fracture from the time of presentation, is associated with shorter times from presentation to surgery, increased ability to ambulate postoperatively, and decreased short-term postoperative complications.