INTRODUCTION: Hip fractures are a common problem in the geriatric population, having wide-reaching effects including functional decline and economic impact on the healthcare system. Prior studies have demonstrated both the safety of intravenous (IV) acetaminophen and its efficacy in decreasing perioperative narcotic consumption. The purpose of this study was to determine whether the implementation of a scheduled IV acetaminophen perioperative pain protocol during geriatric hip fracture treatment influenced length of hospital stay (LOS), pain level, narcotic use, physical therapy (PT) participation, and discharge disposition.

METHODS: After IRB approval was obtained, a retrospective CPT code (27235, 27236, 27244, 27245) search was performed and the charts were reviewed of all patients 65 years or older admitted to the orthopaedic service at a Level-1 trauma center who underwent operative treatment for a hip fracture from June 1, 2011 through May 31, 2013. The patients were divided into two cohorts; the first (Group 1) consisted of patients treated before the initiation of a standardized IV acetaminophen pain-control protocol, and the second (Group 2) consisted of those treated after the protocol was initiated. A total of 365 consecutive fractures in 360 patients were identified. Pathologic fractures (8), periprosthetic fractures (8), concomitant injuries requiring operative intervention (8 fractures in 7 patients), and perioperative deaths (5) were excluded. This resulted in 332 patients with 336 intertrochanteric or femoral neck fractures (169 fractures in Group 1, 167 fractures in Group 2) with a mean age of 83 years (range 65-101).

RESULTS: There was no statistically significant difference in demographic data (age, gender, fracture classification, BMI) or time from admission to the operating room between the two cohorts. Group 2 had a shorter mean LOS (4.4 vs. 3.8 days), lower mean VAS pain score (4.2 vs. 3.8), lower mean narcotic usage (41.3 vs. 28.3 mg "morphine equivalent"), lower rate of PT sessions missed (21.8% vs. 10.4%), and higher likelihood of discharge home instead of to a secondary care facility (7.1% vs. 19.2%) (p≤0.001 respectively). The two groups did not show a statistically significant difference in use of as needed bowel motility agents (p=0.29) or anti-emetic medications (p=0.48). Separate multivariate regression analyses also demonstrated statistical significance for the utilization of IV acetaminophen as an independent predictor of decreased length of stay, decreased VAS pain scores, lower narcotic usage, and fewer missed physical therapy sessions (p<0.001 respectively). Narcotic use predicted an increased LOS (p<0.001).

DISCUSSION AND CONCLUSION: The utilization of scheduled perioperative IV acetaminophen as part of a standardized pain management protocol for operative geriatric hip fractures is efficacious for
shortening hospital length of stay, improving subjective and objective pain measures, missing fewer physical therapy sessions, and increasing home discharge rate.