



Improving Quality Outcomes in Hip Fracture Patients through Development and Implementation of an Evidence-Based Protocol

Joshua Landau, MD; Cynthia Rizzo, RN, BSN, MBA; Eva Hyde, MSN, RN, ONC, CNS; Ann Councilman, RN, BSN, MHA; Sendil Krishnan, MD; Randy Absher, PharmD, BCPS; Kevin Supple, MD; John Graves, MD; Sharon McCarter, RN, MHA, BSN, CNOR; Mark Sawulski, PT; Susan Ireton, PA-C; Zackary Brooks, LCSW; Catherine Lamberton, RD, LDN; Leah McCoy, MA, CCC-SLP; Margie Lester, MSN, RN



Objectives

1. Describe innovative process improvement strategies used to develop and implement an evidence-based hip fracture protocol
2. Identify quality outcomes resulting from protocol implementation

Background

National statistics indicate that hip fractures are a growing problem in the United States, with more than 300,000 occurring annually and an annual hospital cost of at least \$4.5 billion. As Baby Boomers age, the number of hip fractures is expected to increase to at least 650,000 each year by 2050. Hip fractures are most prevalent in the elderly, with 90% due to falls. Approximately 50% of hip fracture patients will not regain pre-hospital mobility and function, with 25% requiring Long Term Care (LTC) post-hospitalization. Mortality rates for these patients range from 10% - 35% mortality within the first year post-fall.

Purpose

The purpose of this protocol development was to create a consistent interdisciplinary approach to hip fracture patient care based on best-practices, decrease variability and improve patient outcomes, including mortality rates.

Methodology

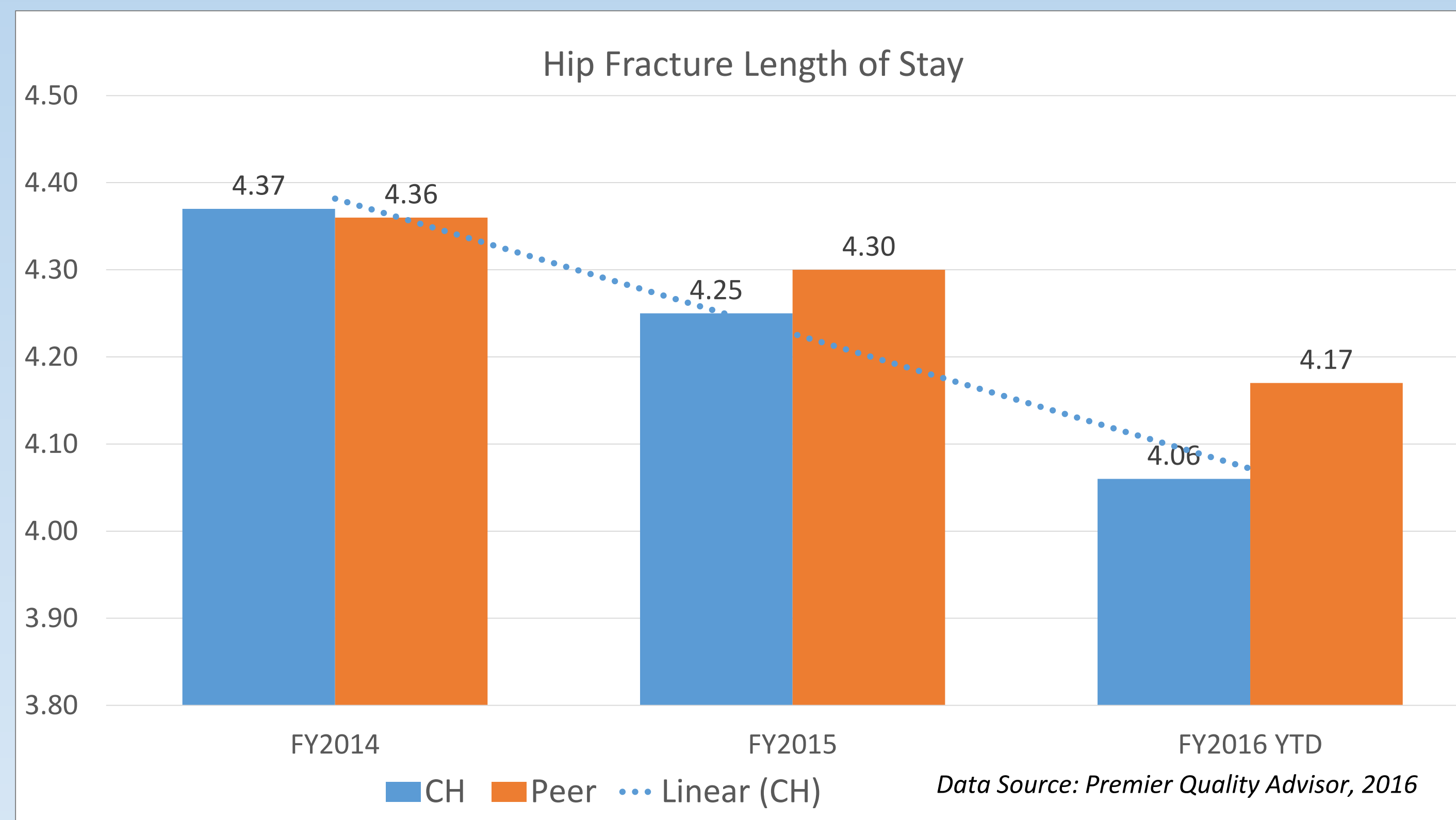
This project was conducted at a healthcare system in the southeastern United States. Current literature was reviewed and hip fracture care at other facilities was investigated. The IOWA Model of evidence-based practice (EBP) and the PDSA (Plan-Do-Study-Act) Quality Improvement Process were utilized for protocol development. An interdisciplinary Hip Fracture Committee was formed to lead protocol development and implementation. This team included health system administrators for the orthopedic service line, medical staff (i.e., orthopedics, hospitalists, anesthesiologists, emergency management), nursing, pharmacy, operative services, rehab services, palliative care, clinical nutrition, social work, case management and clinical information management.

We take this opportunity to acknowledge the dedicated collaborative teamwork, caring spirit and perseverance of the entire interprofessional Cone Health Hip Fracture Committee and Orthopedic Continuous Performance Improvement Team. We also thank past team members who have transitioned to other roles and career paths.

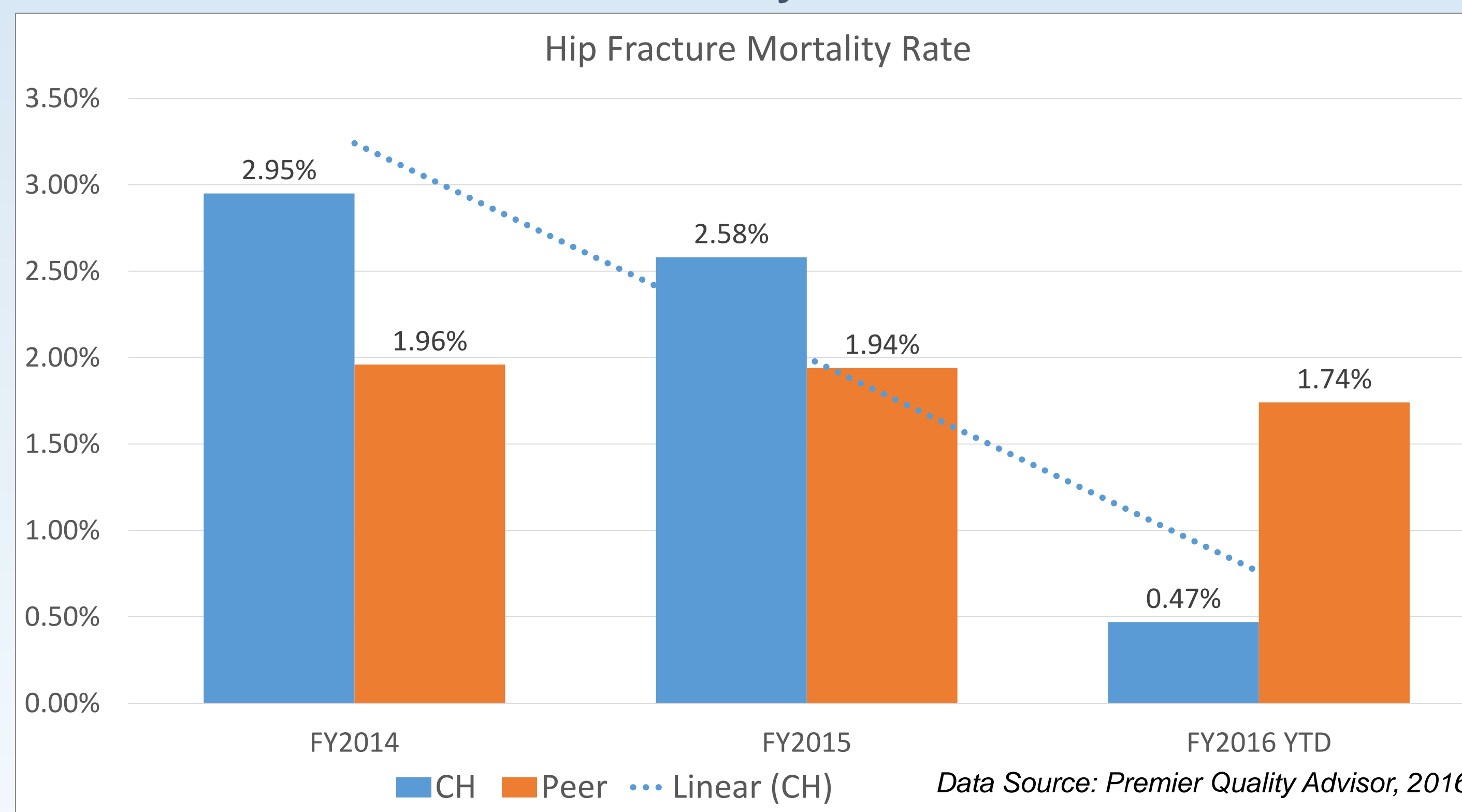
Methodology

Baseline and post-protocol implementation data was collected for hip fracture length of stay, mortality and several other quality measures. Retrospective and prospective patient chart reviews were also conducted to measure protocol compliance. Protocol components included: 1) Co-managed approach to patient care (medical/orthopaedic collaboration), 2) evidence-based order sets and clinical pathways, 3) appropriate VTE prophylaxis, 4) patient/family education, 5) multi-modal pain management with focus on geriatrics, delirium prevention and decreased opioid use, 6) early mobility, 7) automatic nutrition consults, 8) speech language pathology for swallow evaluation, 9) palliative care consults, and 10) osteoporosis awareness. The protocol was implemented in June 2013.

Length of Stay (LOS)



Mortality Rate



Outcomes

See Graphs: Hip Fracture Length of Stay (LOS) and Mortality Rates. Prior to protocol implementation in 2013, the hip fracture mortality rate was 5.15% and FY 2013 LOS was above benchmark, at 4.72 days. Over the last 3 fiscal years following protocol implementation, mortality rates and LOS have decreased, trending toward Inpatient Quality Indicator (IQI) benchmarks for Top Decile (i.e., top performer peer facilities), with both currently better than benchmark. Other improvements in quality outcomes noted since protocol implementation include protocol compliance (98 - 99% compliance), postoperative metrics (as high as 100%) and discharge metrics (as high as 96%).

Discussion/Conclusions

This protocol demonstrates a state-of-the-art approach to a common problem seen throughout the US and internationally and serves as a model for integrating best-practices and a co-managed approach in providing standardized top-tier care to hip fracture patients. Outcomes at this healthcare system continue to improve following implementation of this protocol.

Implications

This protocol can be utilized to assist other facilities with protocol development. It can be used as a framework to direct and drive best practices in caring for the hip fracture population. The model can be used to standardize care and produce better results by improving mortality, postoperative care, and the transition from hospital to home. It also showcases an innovative strategy for engaging physicians from multiple practices to lead the implementation of clinical process improvement utilizing this approach. Continuation of collaborative efforts is required to sustain positive outcomes with the goal of top-tier patient care.

References

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3. Hughson, et al., (2011). Hosp Pract (Minneap). *Hip Fracture management for the hospital-based clinician: a review of the evidence and best practices*,39(1); 52-61.