A Midline Shift - Streamlining Communication and Throughput Within Two Neurosurgical Practices In A Rural Verified Level-2 Trauma Center

Northeast Georgia Health System

Challenge

It is not uncommon for verified or designated community Level 2 and Level 3 trauma centers to be served by multiple neurosurgical groups to facilitate coverage. These groups are generally a combination of health-system owned or private-practice.

At Northeast Georgia Medical Center (NGMC) two Neurosurgery groups provide trauma support. Historically, throughput of neurosurgical patients and communication regarding the care of these patients has been impacted, due to the existing model. Delays in communication and planning were common due to the nature of running a neurosurgical practice; either office, surgery center, or hospital-based procedures.

With the volume of neurosurgical trauma patients at NGMC increasing 33% through the years of 2016-2020, the need to develop a more standard approach to communication and management of these patients became glaring.

Change/Intervention

With the support of the trauma program leadership and a growing neuroscience service line, the health system and the private-practice group, decided to hire a physician assistant (PA) to facilitate communication and streamline patient care between the two groups. This position is a Monday thru Friday position, 0700-1600. It was filled by a PA with existing neurosurgical experience. The position allows:

•A central contact to facilitate patient care decisions, family discussions, and discharge planning.

•The Neurosurgery PA to perform bedside procedures such EVDs and Bolts.

Measuring The Effects of The Change

Trauma registry data was utilized to evaluate the effectiveness of the addition of the Neurosurgery PA position. Specifically, pre-implementation data, covering 2016 and 2017, was compared to post-implementation data, covering 2019-2020. The implementation year, 2018, was excluded from the analysis. The data reviewed included all trauma registry patients who were either admitted by Neurosurgery or who had a Neurosurgery consult. Average hospital length of stay (LOS) was evaluated for the pre and post implementation groups.

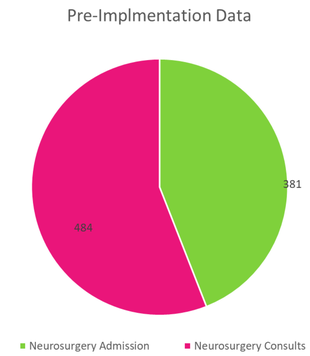
Pre-implementation data:

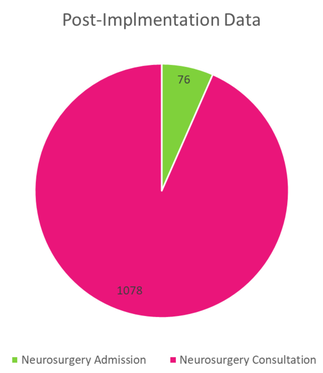
- 865 trauma registry patients with a neurosurgical condition
  - 381 patients were admitted to Neurosurgery
  - 484 patients had Neurosurgery consult

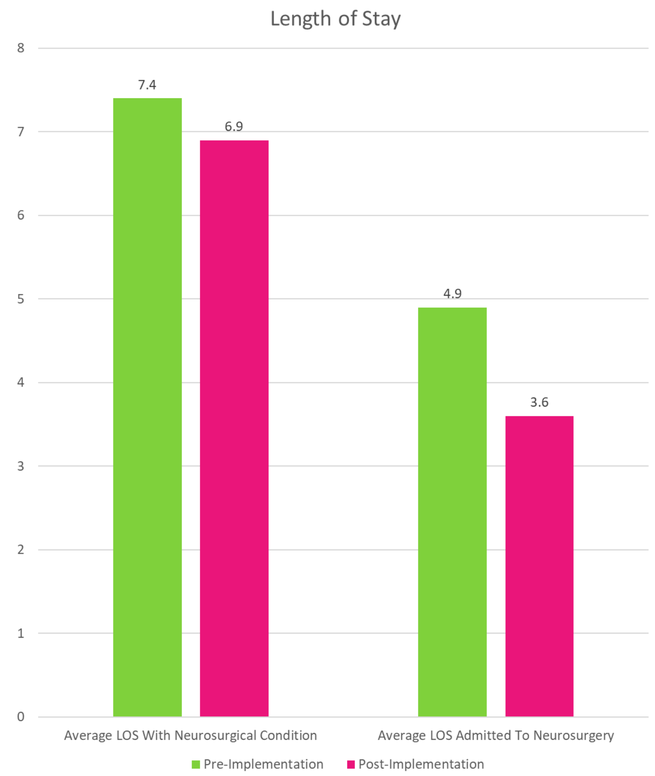
Post-implementation data:

- 1154 trauma registry patients with a neurosurgical condition
  - 76 patients were admitted to Neurosurgery
  - 1078 patients had Neurosurgery consult

Pre-implementation average hospital LOS for these patients was 7.4 days and post-implementation LOS was 6.9 days. When looking specifically at patients admitted to Neurosurgery, the pre-implementation average LOS was 4.9 days and post implementation was 3.6.







Sustaining The Change

The reduction in average hospital length of stay for neuro-trauma patients has proved to be a positive return on investment for the created Neurosurgery PA position. Aside from the financial and throughput benefits, there is greater satisfaction amongst the staff, surgeons, and patients having a single point-person to facilitate care.

This position is health-system owned and continues to receive great support from administration. In fact, progress is currently being made to hire additional PAs for weekend coverage.

Next Steps Moving Forward

- Continue to evaluate LOS specific to the neurosurgical registry patients
  - Although COVID-19 effected hospital capacity, our overall trauma volume for fiscal year 2020-2021 increased 7%.
- Continue to analyze quality indicators related to the position such as:
  - Complication data
  - Time to intervention
  - Time to consultation
- Perform cost analysis of position benefit

Team Members

Kyle S. Gibson, MSN, APRN, AGACNP-BC, TCRN – Nurse Practitioner, Northeast Georgia Health System

Jesse E. Gibson, MBA, BSN, TCRN – Trauma Program Manager, Northeast Georgia Health System

Linda Green, CSTR, Lead Trauma Registrar, Northeast Georgia Health System

John Filson, PA-C – Physician Assistant, Northeast Georgia Health System

Charles Richart, MD, FACS, FCCM – Medical Director, Trauma & Acute Care Surgery, Northeast Georgia Health System