Neuro-Alert: Hemorrhagic Stroke Expedited Transfer from ED to NCCU

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BACKGROUND

- Acute hemorrhagic stroke patients had a delay in transfer from the ED to the NCCU increasing the ED LOS and compromising nursing and patient safety.
- Prolonged ED LOS serves as a barrier by:
  - Aiding in ED “overcrowding”
  - Compromising patient safety by affecting health care provider/patient ratios
  - Decreasing quality of care
  - Increasing medical errors that lead to sentinel events

DESIGN / GOALS

- This project was designed to a performance improvement initiative between the ED and NCCU. This project aimed to decrease ED LOS, improve patient outcomes, increase patient safety and facilitate collaboration and communication across interdisciplinary departments

PARTICIPANTS / SUBJECTS

- The participants were non-traumatic intracerebral hemorrhage patients 18 years or older who presented to Christiana ED and required admission to the NCCU.
- Data collection from July 2015 to October 2015 revealed n=27.
- Post data collection from November 2015 to February 2016 revealed n=22.

RESULTS / OUTCOMES

- The same data points were collected from November 2015 to February 2016 following the initiation of the “Neuro-Alert” process.
  - ED arrival to NCCU arrival decreased by 60 minutes
  - ED arrival to NCCU consult decreased by 37 minutes
  - NCCU consult to NCCU arrival decreased by 58 minutes
  - CT Completion time to NCCU arrival decreased by 44 minutes.

PURPOSE

We sought to develop a Neuro-Alert process for non-traumatic intracerebral hemorrhages in an effort to reduce transfer time from emergency department (ED) arrival to Neuro Critical Care Unit (NCCU) and bring the neurocritical care team immediately to the ED bedside.

NEURO-ALERT DATA RESULTS (TIME IN MINUTES)

- Pre-Data July 2015-October 2015
- Post-Data November 2015-February 2016

IMPLICATIONS FOR PRACTICE

- The impact of expedited transfer of a critically ill stroke patient from the ED to NCCU in a timely manner is paramount to improved patient outcomes.
- A study by Rincon et al (2010) shows that an ED LOS greater than 5 hours before transfer to the NCCU is independently associated with four times the increase of poor patient outcomes at hospital discharge.
- Many factors contribute to prolonged ED LOS and serve as barriers to expediting stroke patients to the NCCU.
- This project advocates for the hemorrhagic stroke patient by matching their needs with immediate management by the Neuro Critical Care team.

METHODS

- Multiple baseline mean data points were collected from July 2015 to October 2015 including:
  - ED arrival to NCCU arrival (288 minutes)
  - ED arrival to NCCU consult (148 minutes)
  - NCCU consult to NCCU arrival (174 minutes)
  - CT Completion time to NCCU arrival (180 minutes).
- An interdisciplinary team comprised of ED and NCCU bedside nurses, NCCU attending physician and the stroke program coordinator was developed to streamline the process between the ED and NCCU once the patient has been identified as a hemorrhagic stroke.
- An algorithm was developed outlining the “Neuro-Alert” process. “Neuro-Alert” activation includes:
  - Alerting several key personnel via pager system
  - Expedites admission to NCCU
  - Improves communication among ED and NCCU departments
  - Alerts the NCCU Advanced Practice Nurse to respond to the ED and remain at bedside until patient is successfully transferred from ED to NCCU.
- The “Neuro-Alert” process went “live” on November 1, 2015.

BARRIERS

- The unpredictable nature of the ED, with a high volume of acute stroke patients, can create a challenge in providing staff resources and bed availability.
- Staff turnover in ED and NCCU account for challenges in continuing education efforts.
- “Performance drift” can impair operational efficiency & lead to a break-down in teamwork and overall performance.

REFERENCES