Improving Quality During Acute Stroke Management Using a Team Approach

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The Purpose

The purpose of this poster is to show how the emergency department staff of a comprehensive stroke center use the standard stroke guidelines , lean principles and team approaches to care. The stroke team and staff nurses worked through performance improvement initiatives to improve the timely care of the stroke patient in the Emergency Department. This poster illustrates how the protocol was modified to optimize the patients health outcome.

Definition

Stroke is likely caused by an obstruction in the blood flow, or the rupture of an artery that supplies blood to the brain There are two main types of stroke; Ischemic stroke which occurs in 87% of patients, occurs when a clot or thrombus forms blocking blood flow to the brain. Hemorrhagic stroke, which occurs when a blood vessel on the brains surface ruptures and inundates the space between the brain and skull.

Statistics

The stroke team was activated 667 times in 2015 by EMS and the ED team. Of that 108 patients received TPA and 21 received endovascular intervention in interventional radiology.

Conceptual Model:

The Robert Wood Johnson University Hospital Conceptual Model provides the basic framework by which competent, effective, and professional patient-centered nursing care is provided. All five of the Model's key components are considered with regards to the implementation of the safety tools/initiatives that were instituted in the Emergency Department. However, the concept of Management of Health is best applied to this project; the goal is to "optimize the patient's potential for health"

2015 Code Stroke Goals

The standards for stroke patients that we measure are patient arrival to CT of brain

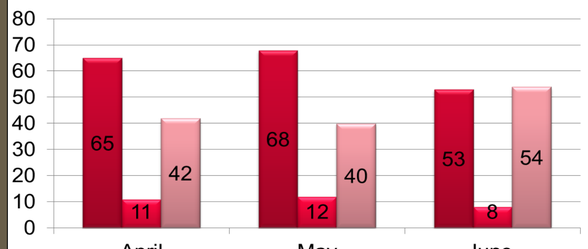
Goal times

Door to Ct <25 min

Door to Ct read <45 min

Consider CTA per Endovascular Guidelines

Pre Intervention Data



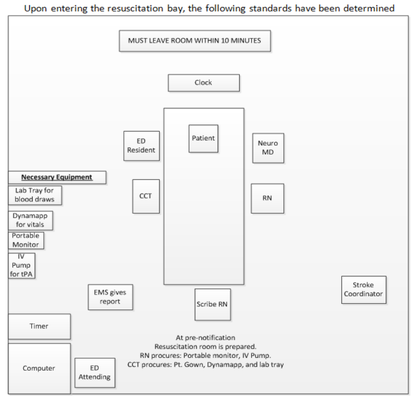
- **Pre-Notification**: •EMS activates code stroke & team alerted •Resuscitation Room held and prepared
- **Patient arrives**: •EMS provides complete handoff Time clock started
- **Evaluation**: •Team places pt on portable telemetry monitor, obtain IV access, labs •ED/Stroke team assessment •Pt transported to CT scan with nurse and stroke team member
- **Treatment**: •Code Stroke Protocols Initiated and TPA as applicable •Intervention as applicable •Bed request for admission
- **Transition of Care**: •Stroke unit bed assigned and ready •RN handoff completed

Lean Process

A lean charter was written with goals to deliver the same high quality care while reducing the door to TPA administration to 45 mins or less in 75% of the TPA patients!

Identified Key Concepts

- Room Design
- Closed loop communication
- Initial ED Assessment
- Ordering, obtaining, and analyzing of Head CT\
- Pharmacy Preparation



Initial Go-Live Results

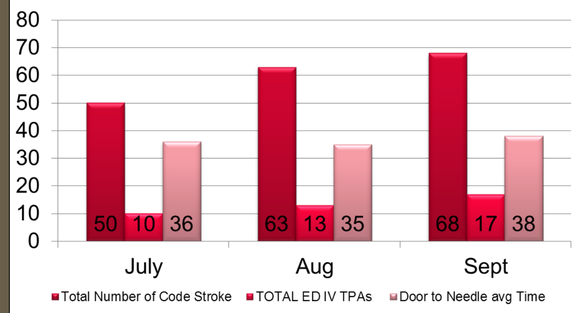
- Trial 1 Arrival to Decision 19 min. TPA not administered due to ICH
- Trial 2: Arrival to TPA Administered 25 min with a CTA completed.
- Trial 3 Arrival to TPA Administered 18 Min with a CTA completed.

Quality Discussion

- EMS being 'out of service' to community
- ED MD and nurses screening versus initial assessment
- High TPA rate
- TPA delivery in CT Scan versus the ED
- Reduction in time of read due to pressures of the Stoke Neurologist
- Hemorrhagic transformation rate of 0%

Post Intervention Data

- **Pre-Notification**: •EMS activates code stroke & team alerted direct to CT
- **Patient arrives**: • EMS provides complete handoff to ED MD at arrival in hallway. Quick MD screen Pt to CT on EMS equipment & ED RN Stroke Team meets team in CT
- **Treatment**: • Code Stroke Protocols Initiated and TPA as applicable • Intervention as applicable • Bed request for admission
- **Transition of Care**: •Stroke unit bed assigned and ready •RN handoff completed



Conclusion

- The implemented process met the goal of reducing door to TPA administration times
- Results sustained with **Zero** adverse patient outcomes related to ED initial assessment or TPA administration
- CT complete to CT interpretation times most improved

References

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