Quality Improvement: Responding to In-House Stroke STAT calls

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Rationale

- Responding to acute out-of-hospital stroke (OHS) is frequent and common for most ED nurses.
- Responding to acute in-house stroke (IHS) is infrequent and unfamiliar for most floor nurses.
- In our 867-bed CSC tertiary care hospital, IHS accounts for 12 – 15% of the annual stroke team calls.
- Key to stroke management is timely and efficient care
- Stroke recognition, assessment and treatment is often delayed for IHS.
- The typical IHS is in the hospital for surgical procedures or cardiac disorders.[1-3]
- Staff unfamiliar with the onset of stroke may not immediately recognize stroke symptoms or attribute them to other causes.
- Further delays can occur due to a lack of knowledge of stroke code procedures by staff from different services.

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Quality Initiative

- Need expert stroke nurses to respond to in-house stroke STATs
- Can assist the bedside nurse and Neurology responder to optimize patient outcomes
- Required a plan to respond to IHS Stroke STATs

Materials & Methods

- Stroke Unit Step Down staff created objectives, roles and resources
- Developed and implemented a protocol
- Resource Nurse in SD carries a stroke beeper 24/7
- Respond immediately to the IHS Stroke STAT
- Guide and support the bedside nurse
- Educate the patient and family on what is happening
- Assist in faster access to CT scan and administration of tPA
- Promote transfer to a higher level of care if needed
- tPA given while still in CT, after transfer to the ICU or while back on the patient's floor dependent on availability of ICU bed
- To assess effectiveness, time from onset of symptoms to Stroke STAT call, time of call to CT and time of call to tPA administration were assessed.

Results

- The Stroke STAT Response protocol went into effect on July 22, 2015
- 85 IHS calls pre-intervention and 80 calls post
- Time to task (in minutes) were compared pre- and post-intervention using Wilcoxon Ranked Sum tests
  - August 1, 2014 - March 31, 2015
  - August 1, 2015 - March 31, 2016
- All times decreased, see table for median (interquartile range) times per task, percentage change and p values
- Call to IV tPA times are presented descriptively only, 4 were treated pre-intervention and 6 post
- While no statistical significance was found, decreases in time to treatment are clinically relevant.

Discussion

- Small reductions in time to treatment can result in significant and robust health benefits over patients' lifetimes.
- Using stroke experts to care for patients as a team in a timely fashion provides comprehensive quality care and utilizes internal resources to their full potential.

Conclusion

- Outcomes have been positive
- Nurses feel more supported with SD staff responders
- Time from onset to call, CT and treatment all decreased
- Physicians were able to make treatment decisions sooner
- Unnecessary delays were reduced

IHS Stroke STAT – Time to Task

	N	Pre (minutes)	N	Post (minutes)	% reduction	P
Onset to call	68	21 (5,50)	74	11 (3.75,30)	47.6%	0.151
Call to CT	64	42 (24,62.75)	65	32 (21.5,51)	23.8%	0.096
Call to IV tPA	4	82.5 (50.75,138.25)	6	68.5 (60.75,93.5)	17%	N too small