Use of a Stroke Stop
Implementation of a Direct to CT Approach

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Disclosure Statement

• I have no actual or potential conflicts of interest in relationship to this presentation.
Welcome

My Background

- Stroke Program Coordinator
- Stroke Certified
- American Association of Neuroscience Nurses Member
- Nebraska Stroke Advisory Council Steering Committee (NSAC)
- Lincoln Stroke Partnership
Objectives

- Understand the purpose of a Stroke Stop
- Discuss the importance of using a Stroke Stop
- Describe steps to develop a Stroke Stop
- Advance the quality of acute stroke care
Stroke Stop

• An interdisciplinary approach to improve the timeliness of alteplase (tPA) administration
• Protocol-driven process with clear definition of roles and parallel processing of tasks
• Involves stroke patients currently being brought in by EMS to be taken directly to CT
• Door to needle goals changing from 60 minutes to 45 minutes
• August 2015: Discussions started at Stroke Committee regarding a “pit crew” approach
• September 2015: Formed a sub-group with key members from our hospital stroke committee to attend meetings for the sole purpose of the development of a Stroke Stop
• October 2015: First meeting where we discussed current roles/process and made goals for new roles/processes.
• November 2015: Second meeting where follow-up from first meetings assignments were discussed and process algorithm was made.
• December 2015: Education
• Jan 1, 2016: Implementation
Needs Assessment

• What can be done at the hospital level? What can be done by EMS?

• Identify Barriers
  • Time spent in patient room
  • EMS turnaround times

• Define Goals and Objectives
  • Bypass patient room and take the patient directly to CT with the goal of reducing door-to-CT time

• Prioritize interventions for stroke patients
  • CT, Lab, EKG, Assessments, etc.
EMS Goals

• Correctly identify patients with stroke symptoms
  • Prehospital stroke screening tool
• Begin transport within 10 minutes of arrival at patients side
• Activate “Stroke Alert” early!
• Provide hospital with appropriate information in radio report
  • Patients age and gender
  • Results of prehospital stroke screening tool
  • Last Known Well and/or Symptom Onset time
  • Glucose
• Stop in ED at designated site
Stroke Stop at St. Elizabeth
What happens at the stroke stop?

- EMS Report:
  - Stroke symptoms
  - Medications—Particularly blood thinners
  - Medical history
    - Prior stroke
    - Diabetes
    - A-fib/A-flutter
- Provider Exam
  - Brief Neuro—BE FAST, FAST-ED
- Nursing
  - Lab Draw/Peripheral IV
Goals

Door to CT Complete <15 min
Door to CT Results
Door to Lab Results
Door to EKG <35 min

<60 min Door Out

<10 min Door to Provider
<45 min Door to Needle
**Parallel Processing**

- **Stroke Alert Notification**
  - EMS gets LKW
  - ED RN takes ED bed to CT

- **EMS/ED RN Take Patient to CT**
  - EMS leaves
  - CT scan performed

- **Alteplase Decision**
  - CT Results
  - ED provider calls neurologist if applicable
  - Alteplase Ordered

- **Prepare patient for transfer to Primary Stroke Center or higher level of care**

- **≤ 15 min**
  - Patient Arrives
    - EMS at Stroke Stop
    - Brief Assessment
    - Rapid Registration
    - IV started & lab drawn

- **≤ 10 min**
  - RN Takes Patient to ED Room
    - Provider completes NIHSS
    - Obtain weight
    - RN assessment done
    - Start 2nd IV for alteplase
    - EKG

- **≤ 35 min**
  - Alteplase Administration
    - Alteplase bolus/infusion

- **≤ 60 min**
  - Prepare patient for transfer to Primary Stroke Center or higher level of care

- **≤ 45 min**
  - Alteplase Administration
    - Alteplase bolus/infusion
• **Comparison of CY2015 to January/February 2016**
  • All based on comparison of LFR patients only

<table>
<thead>
<tr>
<th></th>
<th>2015 (minutes)</th>
<th>2016 (Jan/Feb)</th>
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<tbody>
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<td>11.52</td>
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<td>Door to Lab Results</td>
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<td>Door to EKG</td>
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Stroke Stop Results

Comparison of CY2016 to CY2018

- All based on comparison of LFR patients only

<table>
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<tr>
<th>Procedure</th>
<th>2015 (minutes)</th>
<th>2016 (minutes)</th>
<th>2017 (minutes)</th>
<th>2018 (minutes)</th>
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Door to Needle Alteplase Times

In Minutes

- 2015: 61 minutes
- 2016: 47 minutes
- 2017: 47 minutes
- 2018: 45 minutes
Conclusion

• A critical component of the Stroke Stop’s success is a willing collaboration between the pre-hospital EMS providers and the ED staff
• Invite the right person for the key roles identified
• Education and follow-up
• Ongoing assessment
  • Have now began using the Stroke Stop for walk-in stroke patients direct from triage
Questions?
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