Improvements in Stroke Care through Community Partnerships and Bridging the Gap Between Hospital Units

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Presenter Disclosure Information

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Financial Disclosure:
No relevant financial relationship exists.
Objectives

• Recognize the importance of partnering with community hospitals and EMS systems to deliver effective stroke care.
• Evaluate the effectiveness of partnering with intra-hospital units of delivering stroke care.
• Identify ways that community partnerships can be implemented in your facility.
Our Community’s Hospitals

- We have 3 large health systems that have multiple campuses throughout our Raleigh-Durham area.
- We are so close in proximity that if you were to start driving from WakeMed Raleigh Campus, stopped at each hospital, and end at UNC Chapel Hill, it would only take 1 hour and 15 minutes.
- What does this mean for our patient population?
Just Right Down the Road
Adults, Ages 35+, by County

Rates are spatially smoothed to enhance the stability of rates in counties with small populations.

Data Source:
National Vital Statistics System
National Center for Health Statistics

https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_stroke.htm
North Carolina Strokes

- In 2017, stroke was the third leading cause of death in the state.
- North Carolina is part of the nation’s “Stroke Belt” which consists of eight to twelve state regions in the southern part of the country.
- Death rates from stroke are significantly higher in the Stroke Belt than the rest of the US.
- In fact, every 20 minutes, someone in North Carolina is hospitalized with a stroke and every two hours someone dies from a stroke.
- North Carolina has one of the highest stroke death rates in the nation as it is sixth highest among the 50 states.
April 2005: a bill was introduced in the North Carolina General Assembly that would’ve required every hospital in North Carolina to develop a plan for acute stroke care patients. That proposed legislation did not pass but other legislation was passed in 2006 creating a Stroke Advisory Council.

2007: the SAC partnered with the North Carolina Office of Emergency Medical Services to develop an acute stroke care toolkit for all of the state’s EMS systems.

2008: the task force along with the NC General Assembly created and disseminated a public service announcement about the signs and symptoms of acute stroke in order to address the time-sensitive nature of heart attacks and strokes.

2009: the NC General Assembly banned smoking in bars and restaurants.

2011: a coalition of federal, state, and local government agencies launched a national campaign, the Million Hearts initiative, which focused on preventing 1 million heart attacks and strokes over the course of the next 5 years.
Hospital Partnerships

• In 2017, the WakeMed system transferred 20 patients to Duke Raleigh, Duke University Medical Center or UNC for endovascular intervention.

<table>
<thead>
<tr>
<th>1.3. EMS Systems</th>
<th>COR</th>
<th>LOE</th>
<th>New, Revised, or Unchanged</th>
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<tbody>
<tr>
<td>2. Regional systems of stroke care should be developed. These should consist of the following: (a) Healthcare facilities that provide initial emergency care, including administration of IV alteplase, and, (b) Centers capable of performing endovascular stroke treatment with comprehensive periprocedural care to which rapid transport can be arranged when appropriate.</td>
<td>I</td>
<td>A</td>
<td>Recommendation reworded for clarity from 2015 Endovascular. Class and LOE unchanged. See Table LXXXIII in online Data Supplement 1 for original wording.</td>
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<td>3. Patients with a positive stroke screen and/or a strong suspicion of stroke should be transported rapidly to the closest healthcare facilities that can capably administer IV alteplase.</td>
<td>I</td>
<td>B-NR</td>
<td>Recommendation reworded for clarity from 2013 AIS Guidelines. See Table LXXXIII in online Data Supplement 1 for original wording.</td>
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EMS Partnerships

- Wake EMS has a subcommittee of the peer review group specifically for stroke where stroke coordinators, ED physicians, etc. from the area hospitals discuss protocols with EMS and how to provide the best care for patients. An attempt is made to standardize processes across the county.

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<td>1. EMS leaders, in coordination with local, regional, and state agencies and in consultation with medical authorities and local experts, should develop triage paradigms and protocols to ensure that patients with a known or suspected stroke are rapidly identified and assessed by use of a validated and standardized instrument for stroke screening, such as the FAST (face, arm, speech test) scale, Los Angeles Prehospital Stroke Screen, or Cincinnati Prehospital Stroke Scale.</td>
<td>I</td>
<td>B-NR</td>
<td>Recommendation reworded for clarity from 2013 Stroke Systems of Care. Class and LOE added to conform with ACC/AHA 2015 Recommendation Classification System. See Table LXXXIII in online Data Supplement 1 for original wording.</td>
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EMS Partnerships cont.

- Dedicated EMS liaison
- Wake County EMS began drawing stroke coags and CBC labs in April 2012.
- Johnston County EMS began in September 2012.
- Wake and Johnston Counties began drawing stroke BMPs in October 2014.
## Stroke Average TAT

<table>
<thead>
<tr>
<th>Month</th>
<th>All Stroke Avg. TAT</th>
<th>EMS Collect Stroke Avg TAT</th>
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<tbody>
<tr>
<td>October 2017</td>
<td>49 min</td>
<td>46 min</td>
</tr>
<tr>
<td>November 2017</td>
<td>45 min</td>
<td>36 min</td>
</tr>
<tr>
<td>December 2017</td>
<td>48 min</td>
<td>41 min</td>
</tr>
<tr>
<td>January 2018</td>
<td>49 min</td>
<td>46 min</td>
</tr>
<tr>
<td>February 2018</td>
<td>54 min</td>
<td>43 min</td>
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When comparing data for just the past few months, all code stroke average turnaround times and EMS collect stroke average turnaround times had a 3-9 minute improvement when EMS drew lab work.
EMS Peer Review Subcommittee

- Subcommittee worked to determine best options through research of evidence based practice of a standardized LVO screening tool.

1.2. EMS Assessment and Management

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<tr>
<td>1. The use of a stroke assessment system by first aid providers, including EMS dispatch personnel, is recommended.</td>
<td>I</td>
<td>B-NR</td>
<td>Recommendation reworded for clarity from 2015 CPR/ECC. Class and LOE unchanged. See Table LXXXIII in online Data Supplement 1 for original wording.</td>
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<td>2. EMS personnel should begin the initial management of stroke in the field. Implementation of a stroke protocol to be used by EMS personnel is strongly encouraged.</td>
<td>I</td>
<td>B-NR</td>
<td>Recommendation revised from 2013 AIS Guidelines.</td>
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Subcommittee continued

- In addition to lab draws, we will begin supplying EMS with pressure rated IV extension tubing.
- Also determined a go-live date for extending stroke window to 22 hours as recommended by the 2018 Guidelines for the Early Management of Patients With Acute Ischemic Stroke
Partnerships within our hospital

- Admissions to dedicated stroke units
- Multidisciplinary Stroke Advisory Board

### 1.5. Hospital Stroke Teams

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<td>4. Designation of an acute stroke team that includes physicians, nurses, and laboratory/radiology personnel is recommended. Patients with stroke should have a careful clinical assessment, including neurological examination.</td>
<td>I</td>
<td>B-NR</td>
<td>Recommendation wording modified from 2013 AIS Guidelines to match Class I stratifications. Class unchanged. LOE added to conform with ACC/AHA 2015 Recommendation Classification System.</td>
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<tr>
<td>5. Multicomponent quality improvement initiatives, which include ED education and multidisciplinary teams with access to neurological expertise, are recommended to safely increase IV thrombolytic treatment.</td>
<td>I</td>
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<td>New recommendation.</td>
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Intra-hospital partnerships

- Rounding nurses that participate in code strokes inpatient assist with ED code strokes
- Standardized use of Neuro check and Vital signs form across the health system

1.7. Organization and Integration of Components

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<th>4. Different services within a hospital that may be transferring patients through a continuum of care, as well as different hospitals that may be transferring patients to other facilities, should establish hand-off and transfer protocols and procedures that ensure safe and efficient patient care within and between facilities. Protocols for interhospital transfer of patients should be established and approved beforehand so that efficient patient transfers can be accomplished at all hours of the day and night.</th>
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Measurements of Success

- Patient outcomes
- Compliance to Get with the Guidelines and Core Measures
- Constant evaluation of processes and quality improvement measures
References


Questions and Comments