



NCCEP Stroke Protocols

Stroke Triage and Destination Plans

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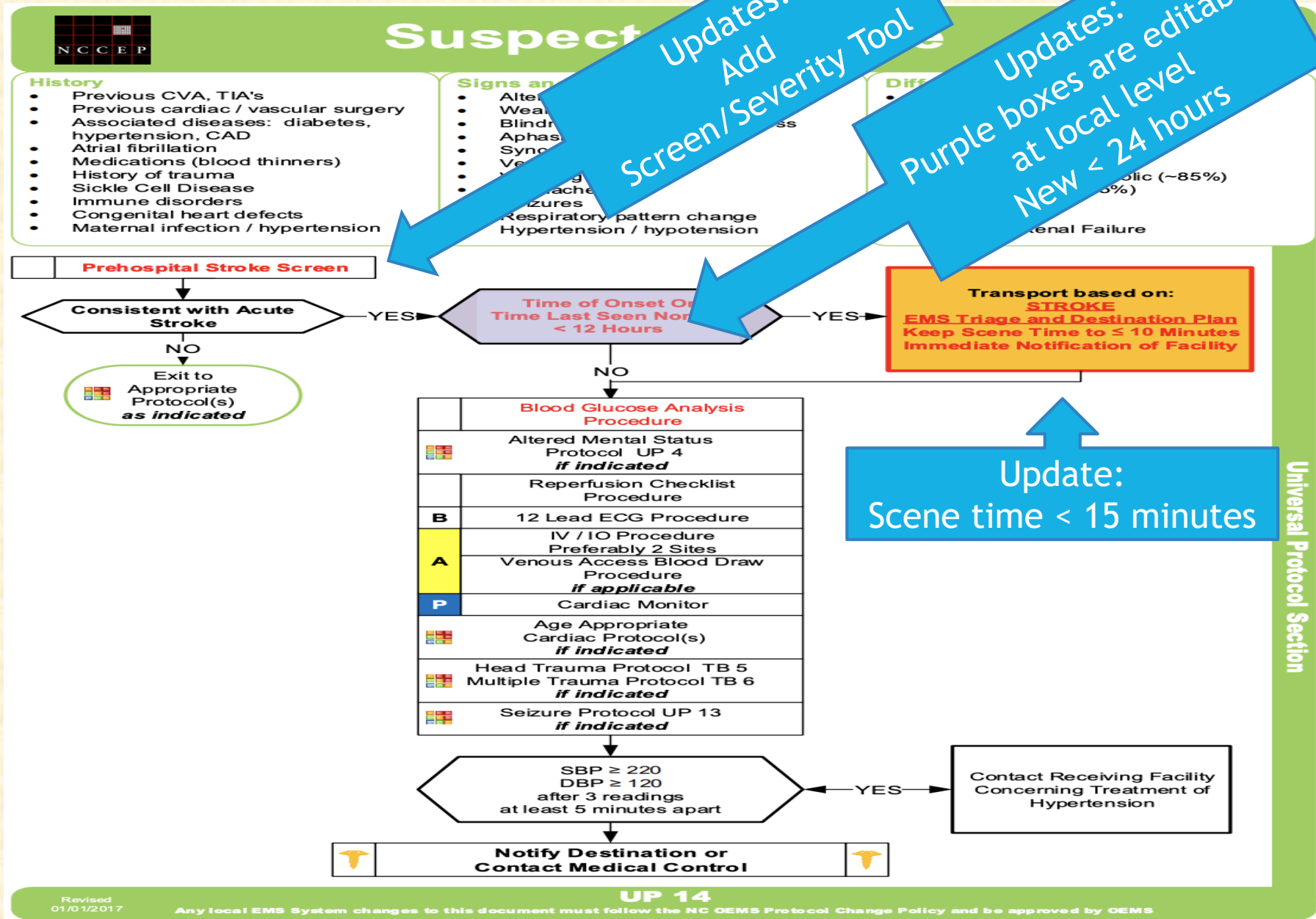
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NC DHHS

NCOEMS

NCCEP Stroke Protocol



NCCEP Stroke Protocol

Suspected Stroke

Universal Protocol Section

Updates:
Purple box
Available for local guidance

Updates:
Purple boxes are editable
at local level
New < 24 hours

Pearls

- **Recommended Exam:** Mental Status, HEENT, Heart, Lungs
- Items in Red Text are key performance measures used in
- **Acute Stroke care is evolving rapidly. Time of onset /**
depending on the capabilities and resources of your **at any time**
Plan.
- **Time of Onset or Last Seen Normal:**
One of the most important items the pre-hospital
are based.
Be very precise in gathering data to establish the
NOT "about 45 minutes ago."
Without this information patient may not be
Wake up stroke: Time starts when patient wakes
You are often in the best position to determine actual
caregivers available. Often these sources of information may arrive well after you have delivered the patient
to the hospital. Delays in decisions of lack of information may prevent an eligible patient from receiving
thrombolytics.
- The **Reperfusion Checklist** should be completed for any suspected stroke patient. With a duration of
symptoms of less than **12**, scene times should be limited to ≤ 10 minutes, early notification /
activation of receiving facility should be performed and transport times should be minimized.
- If possible place 2 IV sites.
- **Blood Draw:**
Many systems utilize EMS venous blood samples. Follow your local policy and procedures.
- The differential listed on the Altered Mental Status Protocol should also be considered.
- Be alert for airway problems (swallowing difficulty, vomiting/aspiration).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly.
- Document the Stroke Screen results in the PCR.
- Agencies may use validated pre-hospital stroke screen of choice.
- **Pediatrics:**
Strokes do occur in children, they are slightly more common in ages < 2, in boys, and in African-Americans.
Newborn and infant symptoms consist of seizures, extreme sleepiness, and using only one side of the body.
Children and teenagers symptoms may consist of severe headaches, vomiting, sleepiness, dizziness, and/or
loss of balance or coordination.

Revised
01/01/2017

UP 14

Any local EMS System changes to this document must follow the NC OEMS Protocol Change Policy and be approved by OEMS

NCCEP Stroke Protocol

- Acute Stroke care is evolving rapidly. Time of onset / last seen normal may be changed at any time depending on the capabilities and resources of your hospital based on Stroke: EMS Triage and Destination Plan.
- Time of Onset or Last Seen Normal:
 - One of the most important items the pre-hospital provider can obtain, of which all treatment decisions are based.
 - Be very precise in gathering data to establish the time of onset and report as an actual time (i.e. 13:47 NOT “about 45 minutes ago.”)
 - Without this information patient may not be able to receive thrombolytics at facility.
 - Wake up stroke: Time starts when patient last awake or symptom free.

Updates:
Add obtain phone number
of bystander LKW


- You are often in the best position to determine the actual Time of Onset while you have family, friends or caretakers available. Often these sources of information may arrive well after you have delivered the patient to the hospital. Delays in decisions due to lack of information may prevent an eligible patient from receiving thrombolytics.

NCCEP Stroke Protocol

- **Pediatrics:**

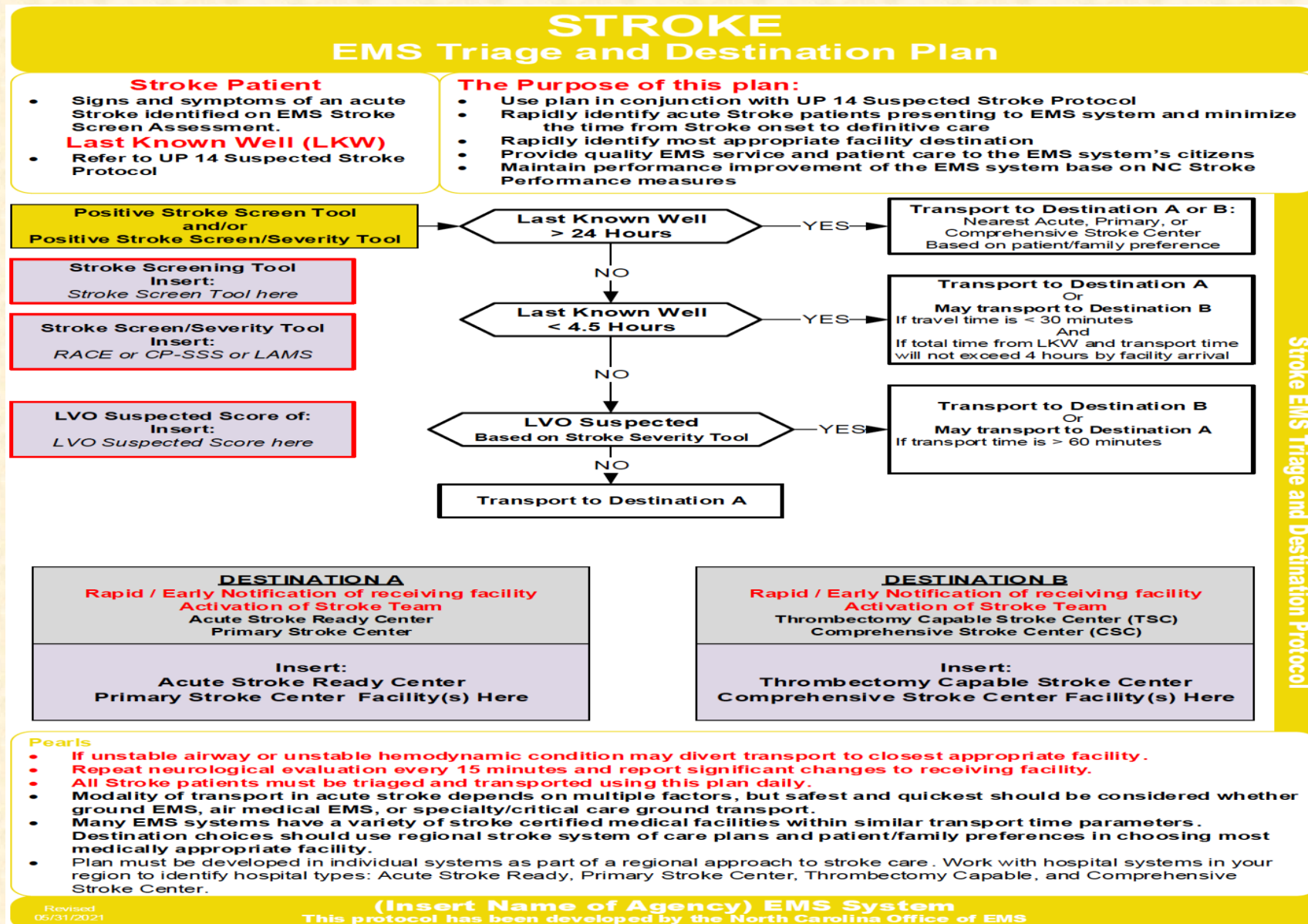
Strokes do occur in children, they are slightly more common in ages < 2 , in boys, and in African-Americans. Newborn and infant symptoms consist of seizures, extreme sleepiness, and using only one side of the body. Children and teenagers symptoms may consist of severe headaches, vomiting, sleepiness, dizziness, and/or loss of balance or coordination.

NCCEP Stroke Triage and Destination Guide

Stroke EMS Triage and Destination Plan			
Stroke Patient <ul style="list-style-type: none">* A patient with symptoms of an acute Stroke as identified by the EMS Stroke Screen Time of Symptom Onset <ul style="list-style-type: none">* Defined as the last witnessed time the patient was symptom free (i.e. the time of onset for a patient awakening with stroke symptoms would be the last time he/she was known to be symptom free before the sleep period)	The Purpose of this plan is to: <ul style="list-style-type: none">* Rapidly identify acute Stroke patients who call 911 or present to EMS* Minimize the time from onset of Stroke symptoms to definitive care* Quickly diagnose a Stroke using validated EMS Stroke Screen* Complete a reperfusion checklist (unless being transported directly to a Stroke Capable Hospital) to determine thrombolytic eligibility* Rapidly identify the best hospital destination based on symptom onset time, reperfusion checklist, and predicted transport time* Early activation/notification to the hospital prior to patient arrival* Minimize scene time to 10 minutes or less* Provide quality EMS service and patient care to the EMS Systems citizens* Continuously evaluate the EMS System based on North Carolina's Stroke EMS performance measures		
<div><div>Symptoms of Acute Stroke Positive Stroke Screen</div><div>Stroke Center or Stroke Capable Hospital within 2 hours from onset of patient's symptoms and no greater than 50 minutes EMS transport time?</div><div>Reperfusion Checklist Contraindications to Thrombolysis</div><div>Transport to closest Community Hospital Listed Insert: Community Hospital Name(s) Here</div></div> <div>Yes</div> <div>No</div> <div>Yes</div> <div>No</div>		<div>Transport to closest Primary Stroke Center or Stroke Capable Hospital Listed Early Notification/Activation Insert: Stroke Capable Hospital Name(s) Here or No Stroke Capable Hospitals within 50 minutes</div> <div>Air Medical SCTP within 30 minutes of patient's location and patient clearly a NEW onset stroke patient? Yes</div> <div>Consider Activating Air or Ground SCTP Transport to closest Primary Stroke Center Listed Early Notification/Activation Insert: Primary Stroke Center Name(s) Here</div>	Stroke EMS Triage and Destination Plan
Pearls and Definitions <ul style="list-style-type: none">* All Stroke Patients must be triaged and transported using this plan. This plan is in effect 24/7/365* All Patient Care is based on the EMS Suspected Stroke Protocol* Primary Stroke Center = a hospital that is currently accredited by the Joint Commission as a Primary Stroke Center. Free standing emergency departments and satellite facilities are not considered part of the Primary Stroke Center.* Stroke Capable Hospital = a hospital which provides emergency care with a commitment to Stroke and the following capabilities:<ul style="list-style-type: none">* CT availability with in-house technician availability 24/7/365* Ability to rapidly evaluate an acute stroke patient to identify patients who would benefit from thrombolytic administration* Ability and willingness to administer thrombolytic agents to eligible acute Stroke patients* Accepts all patients regardless of bed availability* Provides outcome and performance measure feedback to EMS including case review* Community Hospital = a local hospital within the EMS System's service area which provides emergency care but does not meet the criteria for a Primary Stroke Center or Stroke Capable Hospital* Specialty Care Transport Program = an air or ground based specialty care transport program which can assume care of an acute Stroke patient from EMS or a Hospital and transport the patient to a Primary Stroke Center.			
<div>(Insert Name Here) EMS System <small>This protocol has been developed by the North Carolina Office of EMS</small></div>			

NCCEP Stroke Triage and Destination Guide

Draft 2021



NCCEP Stroke Triage and Destination Guide

Draft 2021

STROKE EMS Triage and Destination Plan

Stroke EMS Triage and Destination Protocol

Definitions

- **Acute Stroke-Ready Hospital:**
Has a director of stroke care, written emergency stroke care protocols and written transfer agreements with a neurosurgical capable hospital.
Ability to administer thrombolytics, and an ability to provide CT with no hour limitation.
Facility may have Telemedicine / Telestroke capability for consultation with neurologic specialist.
- **Primary Stroke Center:**
Has same capabilities as Acute Stroke-Ready Hospital.
Accredited and certified by the Joint Commission.
- **Comprehensive Stroke Center:**
Has same capabilities as a Primary Stroke Center.
Capable of offering full spectrum, state-of-the art Stroke care with no day or hour limitation.
Ability to treat stroke patients with catheter-based procedures to remove or dissolve blood clots.
Accredited and certified by the Joint Commission.
- **Thrombectomy-Capable Stroke Center:**
Has same capabilities as Primary Stroke Center.
Staff and providers similar to Comprehensive Stroke Center.
Capable of providing mechanical thrombectomy with no day or hour limitation.

Revised
05/31/2021

(Insert Name of Agency) EMS System
This protocol has been developed by the North Carolina Office of EMS

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2021

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SENATE BILL 683

Short Title: Prehospital Stroke Protocols/EMS Personnel. (Public)

Sponsors: Senator Perry (Primary Sponsor).

Referred to: Rules and Operations of the Senate

April 8, 2021

1 A BILL TO BE ENTITLED
2 AN ACT REQUIRING THE DEPARTMENT OF HEALTH AND HUMAN SERVICES TO
3 ADOPT RULES CONCERNING PREHOSPITAL STROKE PROTOCOLS FOR
4 EMERGENCY MEDICAL SERVICES PERSONNEL.

5 The General Assembly of North Carolina enacts:

6 SECTION 1. Article 7 of Chapter 131E of the General Statutes is amended by adding
7 a new section to read:

8 "**§ 131E-159.5. Rules to establish EMS protocols for treating and transporting stroke**
9 **patients.**

10 (a) The Department shall adopt rules to establish evidence-based protocols for
11 prehospital assessment, treatment, and transportation of stroke patients by emergency medical
12 services personnel. The rules shall include at least the following:

13 (1) Clear and specific guidelines concerning entry and transfer plans for patients
14 with suspected large vessel occlusion that results in the patients receiving care
15 at the most appropriate hospital designated as a primary stroke center.

16 (2) Required education and training for emergency medical services personnel on
17 the assessment and treatment of stroke patients, including those with
18 suspected large vessel occlusion.

19 (b) Each holder of an ambulance permit under this Article shall implement the stroke
20 protocols adopted pursuant to subsection (a) of this section and provide regular training to
21 licensed emergency medical services personnel employees on the assessment and treatment of
22 stroke patients, including those with suspected large vessel occlusion."

Current NC EMS Laws/General Statutes

- ▶ NC already has robust laws governing EMS treatment protocols, policies, procedures, and triage and destination guides
- ▶ NCCEP responsible for writing and updating documents
- ▶ When NCCEP finalizes a version, it then is referenced into rule immediately
 - ▶ This allows immediate changes to occur
 - ▶ Flexible
 - ▶ Responsive to changing EBM practices
 - ▶ Responsive to best-practices
- ▶ Many states codify EMS protocols into law through the legislature
 - ▶ When necessary changes are needed, this may take months to years to effect a change

Current NC EMS Laws/General Statutes

- ▶ SB 683 (2021-22)
- ▶ Redundant in that numerous NCAC already require the same information
- ▶ Problematic in listing a specific disease entity like LVO
 - ▶ LVO determination is difficult in the field
 - ▶ May direct patient away from more timely care locally
 - ▶ LVO could be replaced by any other disease state going forward like STEMI

Current NC EMS Laws/General Statutes

- ▶ 10 A NCAC 13P:

- ▶ .0201 EMS Systems

- ▶ Continuing education requirement based on multiple factors
 - ▶ Already requires Triage and Destination guidelines for providers requiring specialized care and bypass of facilities

Current NC EMS Laws/General Statutes

▶ 10 A NCAC 13P:

- ▶ .0401, .0403, .0405 Medical Oversight for EMS
 - ▶ Medical director
 - ▶ Written treatment protocols
 - ▶ Standardized statewide protocols by NCCEP codified into NCAC upon update and publishing
 - ▶ Allows changes specific to system that will enhance care
 - ▶ Peer Review Committee

Current NC EMS Laws/General Statutes

- ▶ 10 A NCAC 13P:

- ▶ 131E-155 Definitions

- ▶ Peer Review Committee

- ▶ Meet at least quarterly

- ▶ Analyzing patient care and outcome data

- ▶ Multidisciplinary

- ▶ Members from hospitals within EMS service delivery

Current NC EMS Laws/General Statutes

- ▶ Closing
 - ▶ Stroke care is local and regional
- ▶ EMS systems currently are expected to partner with stroke hospitals to form a transportation strategy which optimizes care
- ▶ EMS Triage and Destination Guidelines are difficult to address regional differences in a statewide manner
- ▶ NC leads most states in EBM protocols and the ability for quick changes when evidence demonstrates the need

