

Northeast Cerebrovascular Consortium

EMS Writing Group

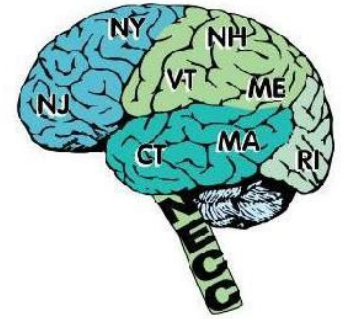
Tom Kwiatkowski, MD

Peter Moyer, MD

State Stroke Survey Results

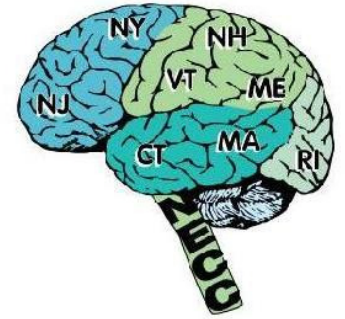
October 4th, 2007

Guiding Principles:



1. Dispatch
 - A. Dispatch Algorithm
 - B. Call type/priority
 - C. Pre-arrival instruction
2. On scene evaluation/treatment
 - A. Stroke scale
 - B. Thrombolytic checklist
 - C. Treatment recommendations
 - D. Prenotification of Emergency Department
3. Education
 - A. What educational materials are used throughout our region for EMS education in the following categories:
 - B. CME (Continuing Medical Education)

Guiding Principles (cont.):



4. Performance Improvement (PI)

- A. What PI activities are being performed throughout our region?
- B. What regional PI initiatives do we recommend for the future as our system matures.

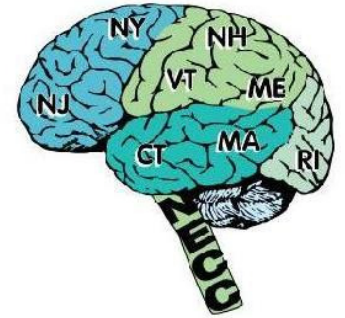
5. Stroke Center Designation

- A. Which locales within our region have stroke center designation?
- B. What criteria are utilized in these locales for diversion of patients to a stroke center?
- C. What are our consensus recommendations for diversion to a stroke center where they exist; e.g. stroke symptoms < two hours or a longer time interval?
- D. Should it be based on utilization of a thrombolytic checklist?

7. Rural Issues

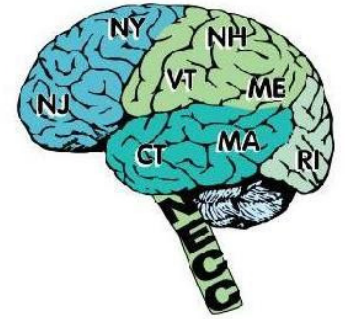
- A. What unique circumstances need to be addressed in rural environments? (e.g. does this influence our recommendation for BLS/ALS interventions?)
- B. Should we develop guidelines for consideration of diversion to a stroke center based on transport time, patient status, etc?

EMS Stroke Systems Survey



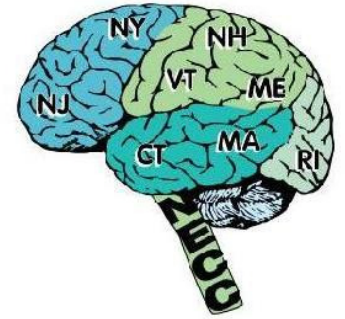
- Telephone survey conducted with 8 state & 2 local EMS Bureaus (NYC + Suffolk County) during September, 2007
- Purpose of survey to assess regional variations in:
 - Dispatch/Pre-Arrival
 - On-Scene Evaluation
 - EMS Education
 - Performance Improvement
 - Stroke Center Designation

Dispatch/Pre-Arrival



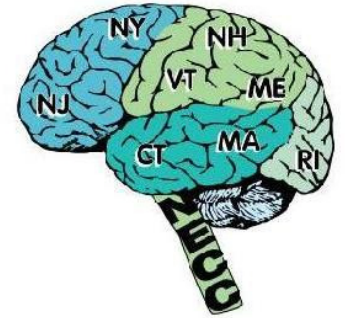
- **3 out of 8 states utilize statewide dispatch protocols.**
- **40% of survey area does not use the highest priority code for stroke**
- **8 out of 10 EMS regions surveyed do not use standardized instructions for family prior to EMS arrival.**

On-Scene Evaluation



- 4 out of 8 states have developed standardized stroke protocols
- 6 EMS regions surveyed use a Pre-hospital stroke scale (Cincinnati)
- 2 out of 10 EMS regions surveyed use a thrombolytic checklist

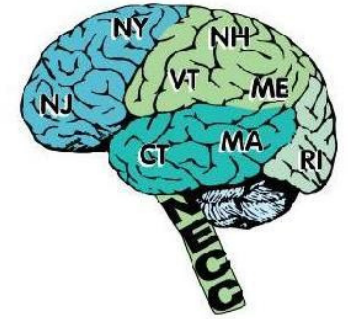
BLS On-Scene Evaluation



State	Airway/ O2	IV	Blood Pressure	ECG	Blood Glucose
CT	Maintain	*	*	*	*
MA	Maintain	*	Treat below 100 systolic	Record	Check if allowed
ME	Maintain	*	*	*	*
NH	Maintain	*	*	*	Check
NJ	Maintain	*	*	*	*
NY	Maintain	*	*	*	*
RI	Maintain	*	*	*	*
VT	No statewide protocols				

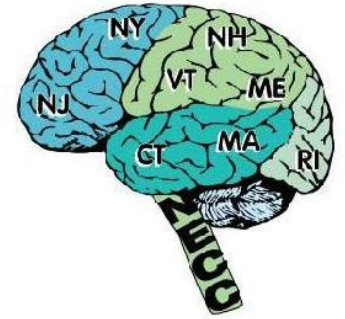
*Determine need for paramedic intercept

ALS On-Scene Evaluation



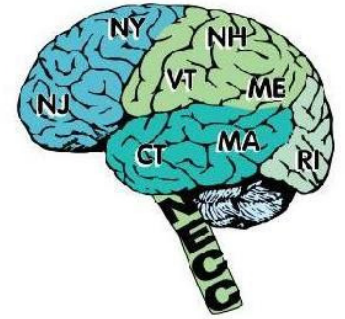
State	Airway/ O2	IV	Blood Pressure	ECG	Blood Glucose
CT	No statewide protocol				
MA	Maintain	Initiate N Saline	Treat below 100 systolic		bG<70 mg/dl, D50 w/authorization
ME	Maintain	Initiate	Maintain	Record	bG<80 mg/dl, D50 w/authorization
NH	Maintain	Initiate	Maintain systolic bp > 90 mmHg		
NJ	No statewide protocol				
NY	No statewide protocol				
RI	Maintain	Initiate N Saline	Maintain	Record	bG<60 mg/dl, D50 w/authorization
VT	No statewide protocol				

On-Scene Evaluation



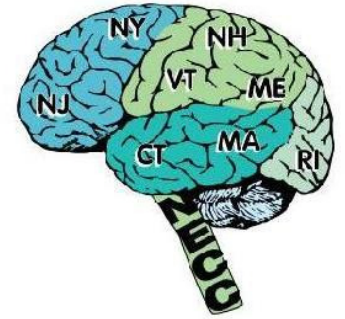
- **7 out of 8 states routinely conduct pre-notification to hospital emergency departments**
- **Rural v. Urban Variation: NYC, New York State, Boston & large metropolitans may notify only if stroke onset under 2 hours.**

EMS Education



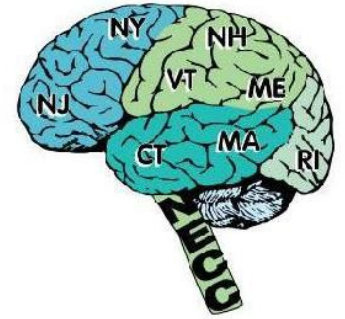
- **All 8 states follow AHA education guidelines for BLS/ALS certification and recertification.**
- **Only 1.5 hrs. of stroke-specific instruction is included.**
- **Primary Stroke Centers routinely host EMS stroke education and provide feedback to providers.**

Performance Improvement



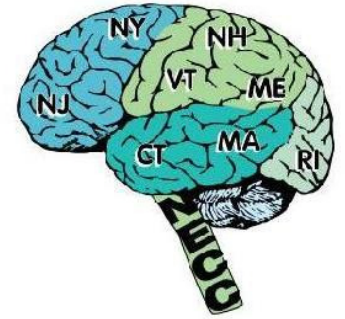
- States expressed awareness that no consistent PI activities are conducted.

PI Initiatives Desired



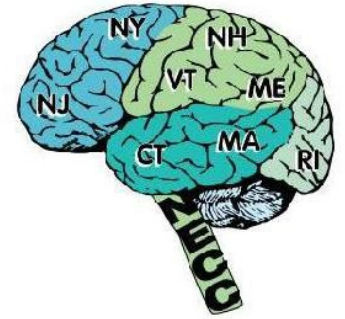
- **Integration of hospital/patient data to determine appropriateness of field diagnosis**
- **In service education to squads**
- **Packaged training based on pre-hospital scenarios**
- **Statewide electronic run forms**
- **Treatment algorithms**
- **Implement data collection improvement**

Stroke Center Designation



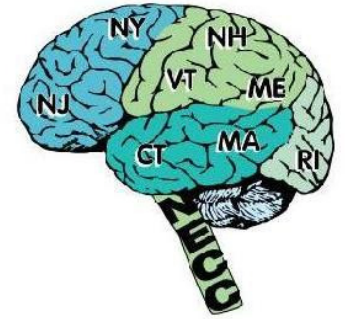
- **2 states had uniform diversion criteria to stroke center hospitals**
- **Only 3 out of 8 states reported knowledge of stroke center designations**

Recommendations



- **Dispatch/Pre-Arrival**
 - Emergency Medical Dispatch (EMD)
 - Priority Codes
- **On-Scene Evaluation**
- **EMS Education**
- **Performance Improvement**
 - Stroke Scale
 - Glucose
 - Pre-notification
- **Stroke Center Designation**

Next Steps:



- **Reach consensus on best practices**
- **Distribute recommendations for feedback**
- **Consider development of modules i.e. for teaching or PI activities**
- **Address unique needs of rural environments**