UPSTATE
Comprehensive
Stroke Center

Stroke Center Designation:
The Path to Readiness

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Upstate CSC

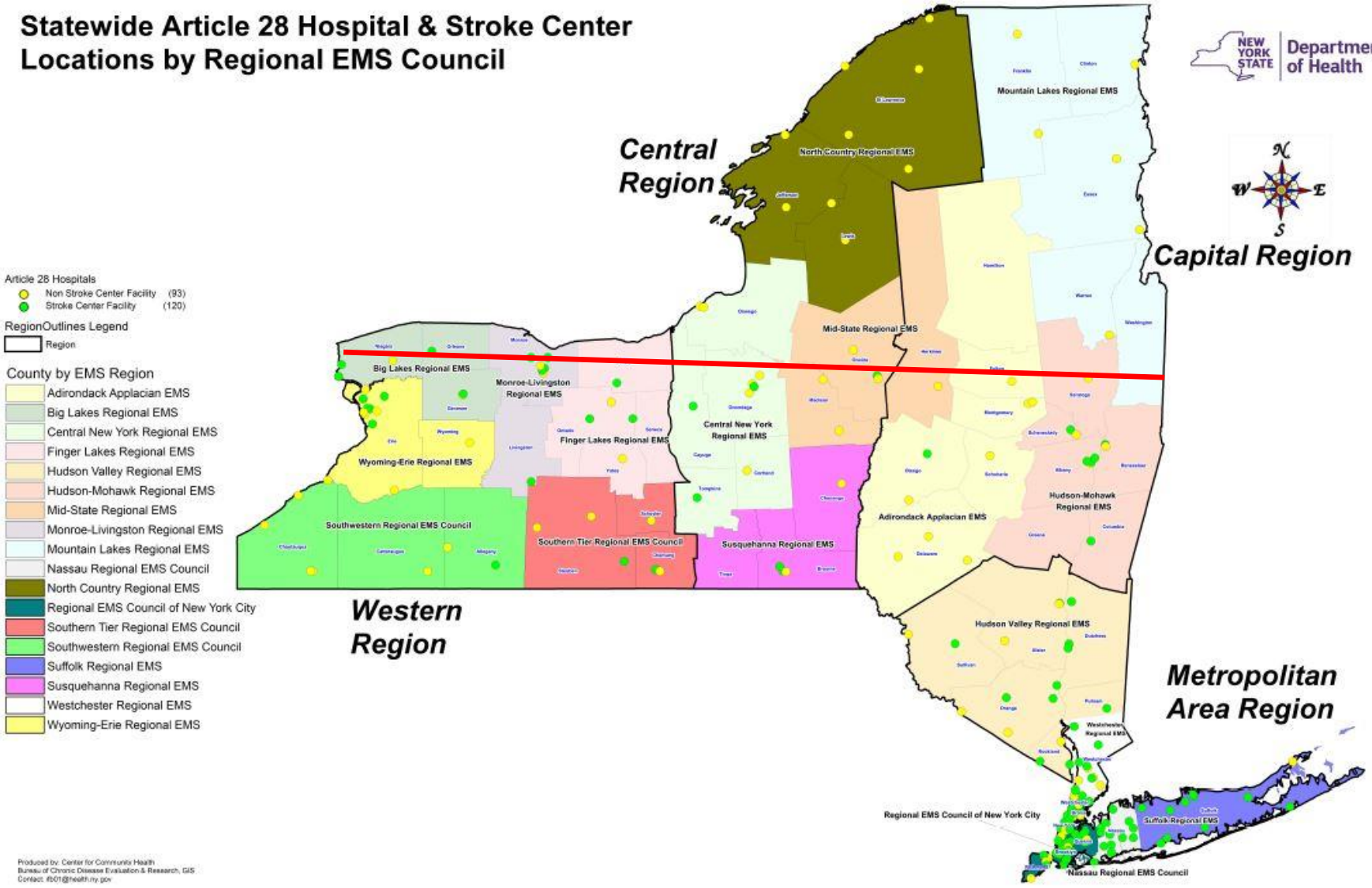
Disclosures

I have no financial disclosures

History of Stroke Center Designation

- 2002-2003 pilot in Brooklyn and Queens
- 2004 all NY hospitals invited to designate
- Currently 120 NYSDOH stroke designated facilities
- 93 non designated facilities
- 63 Coverdell participating hospitals

Statewide Article 28 Hospital & Stroke Center Locations by Regional EMS Council



Cerebrovascular disease (stroke) mortality rate per 100,000

Source:2012-2014 Vital Statistics Data as of May, 2016

Adjusted Rates Are Age Adjusted to The 2000 United States Population

	Deaths				Average population	Crude	Adjusted
Region/County	2012	2013	2014	Total	2012-2014	Rate	Rate
Reg- 7 Tug Hill Seaway							
Jefferson	46	52	48	146	119,623	40.7	42.5
Lewis	10	6	10	26	27,198	31.9	23.5
St. Lawrence	50	43	42	135	111,865	40.2	34.4
Region Total	106	101	100	307	258,686	39.6	36.3
Reg- 8 Central NY							
Cayuga	40	37	39	116	79,284	48.8	35.7
Cortland	22	25	21	68	49,158	46.1	40.8
Madison	39	35	29	103	72,378	47.4	40.9
Oneida	131	111	109	351	233,337	50.1	33.0
Onondaga	196	203	221	620	467,812	44.2	33.8
Oswego	37	47	51	135	121,259	37.1	34.4
Region Total	465	458	470	1,393	1,023,228	45.4	34.5

https://www.health.ny.gov/statistics/chac/mortality/d13.htm

Why Designation?

- Standardizes methods in which we provide stroke care
- Compliance with clinical practice guidelines
- Shown to improve quality of care delivered to patients
- Paul Coverdell project (63 NYS hospitals)
- Better marketability
- Time sensitive treatment
- EMS bypass protocols

(2-45) General: Stroke

EMT

- ABCs and vital signs
- Airway management and appropriate oxygen therapy
- Check blood glucose level, if equipped. If abnormal, refer to the "General: Hyperglycemia" or "General: Hypoglycemia" protocol, as indicated
- Perform a neurological exam, including Cincinnati Stroke Scale or other regionally approved stroke scale
- Determine the exact time the patient was **last in his or her usual state of health and/or seen without symptoms** by interviewing the patient, family, and bystanders
- If time from symptom onset to estimated arrival in the ED will be less than 5 hours, transport the patient to a NYS DOH Designated Stroke Center, or consult medical control to discuss an appropriate destination facility
- Notify the destination hospital ASAP
- Request ALS, if available, but do not delay transport to appropriate hospital

EMT STOP

ADVANCED

- Vascular access

ADVANCED STOP

CC

PARAMEDIC

- Cardiac monitor
- 12-lead ECG when possible
- Maintain systolic BP > 120 mmHg or MAP > 90 mmHg
  If systolic BP > 220 mmHg or diastolic BP > 120 mmHg, contact medical control

CC AND PARAMEDIC STOP

MEDICAL CONTROL CONSIDERATIONS

- Metoprolol 5 mg slow IV push

Reference

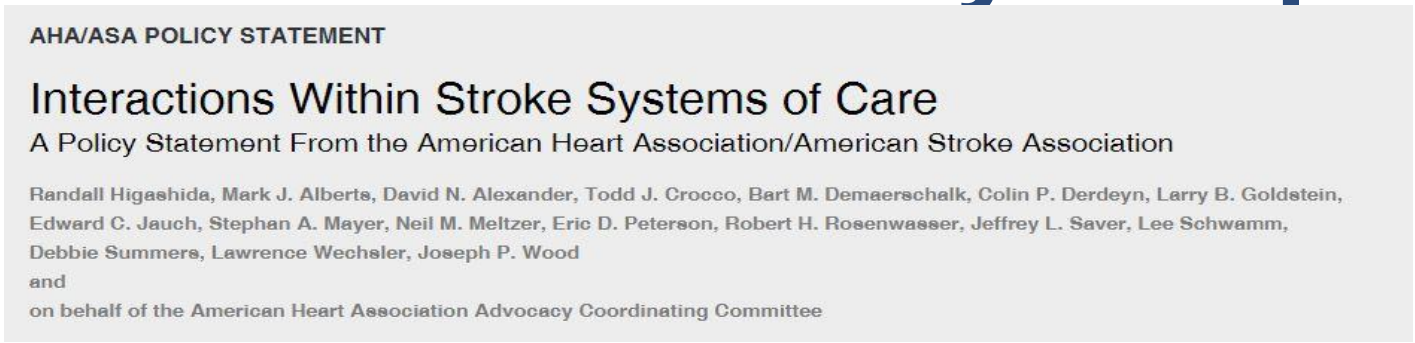
Cincinnati Prehospital Stroke Scale:

- Have the patient repeat, "You can't teach an old dog new tricks"
  - Assess for correct use of words and lack of slurring
- Have the patient smile
  - Assess for facial droop
- Have the patient close eyes and hold arms straight out for 10 seconds
  - Assess for arm drift or unequal movement of one side

Types of Designation

- Acute Stroke Ready Hospital
- Primary Stroke Center (NYSDOH)
- Comprehensive Stroke Center

Acute Stroke Ready Hospital



AHA/ASA POLICY STATEMENT

Interactions Within Stroke Systems of Care

A Policy Statement From the American Heart Association/American Stroke Association

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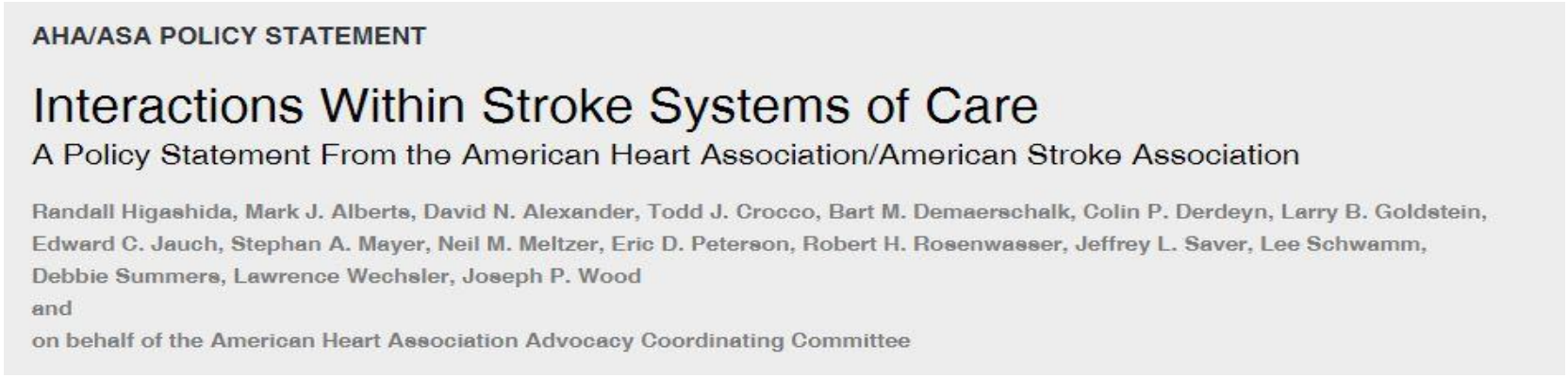
and

on behalf of the American Heart Association Advocacy Coordinating Committee

- Smaller and rural hospitals
- Demonstrate excellence in initial treatment of stroke
- Become part of a region's larger stroke system
- Capability of administering Alteplase
- Resources to diagnose, stabilize, treat and transfer
- Establish telemedicine link to a PSC or CSC
- Transfer arrangements with PSC/CSC to expedite transfers

Comprehensive Stroke Center



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and

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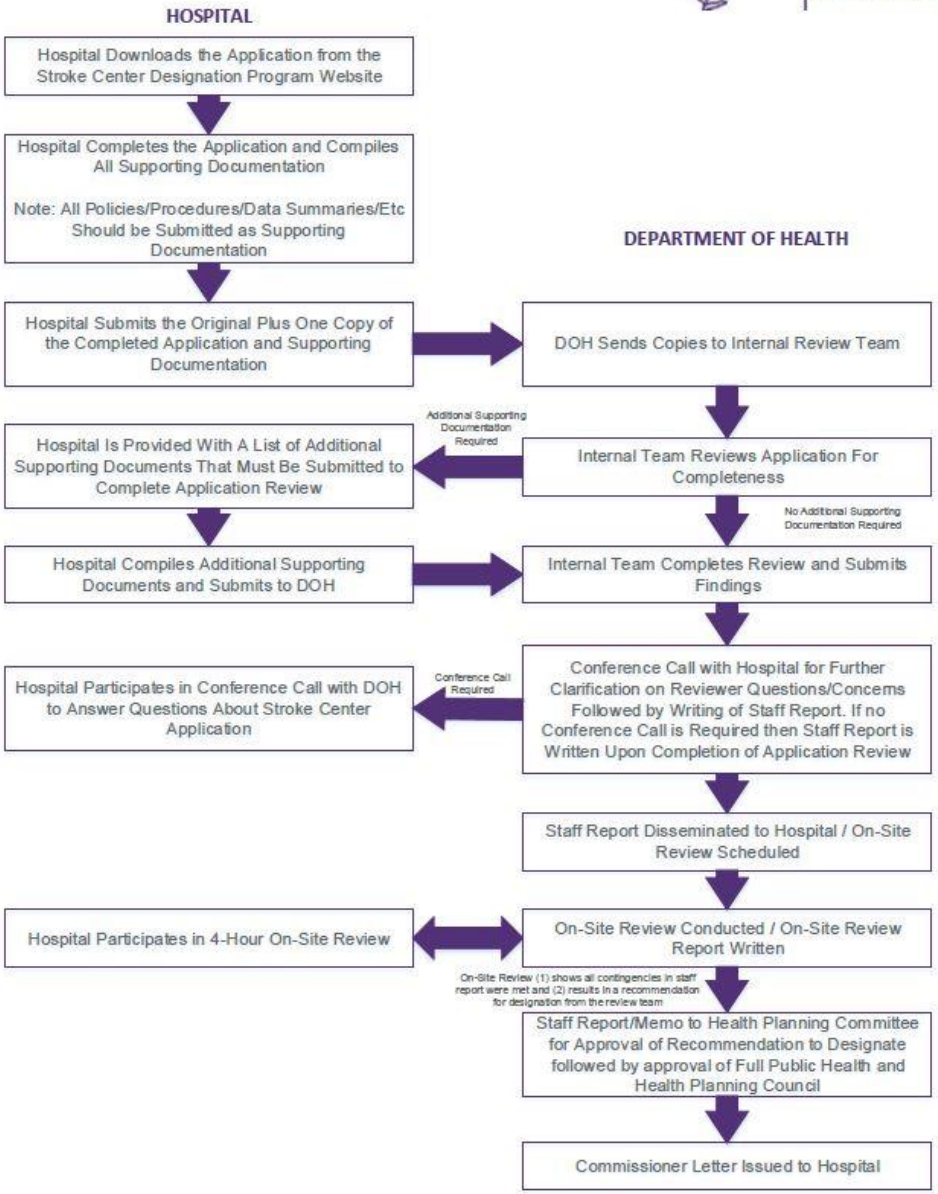
- Intended to care for the most complex stroke cases
- Provide surgical or endovascular interventions
- Presence of a neuro ICU staffed by intensivists
- Ability to perform advanced imaging
- Advanced capabilities available 24/7

Primary Stroke Center

- Demonstrate ability to provide basic level of acute stroke care
- Stroke transfers are appropriate for services not available at the facility
- Application made to NYSDOH
- Yearly self audit tool (HERDS)

Stroke Designation Center Application Process

NEW YORK STATE OF OPPORTUNITY. Department of Health



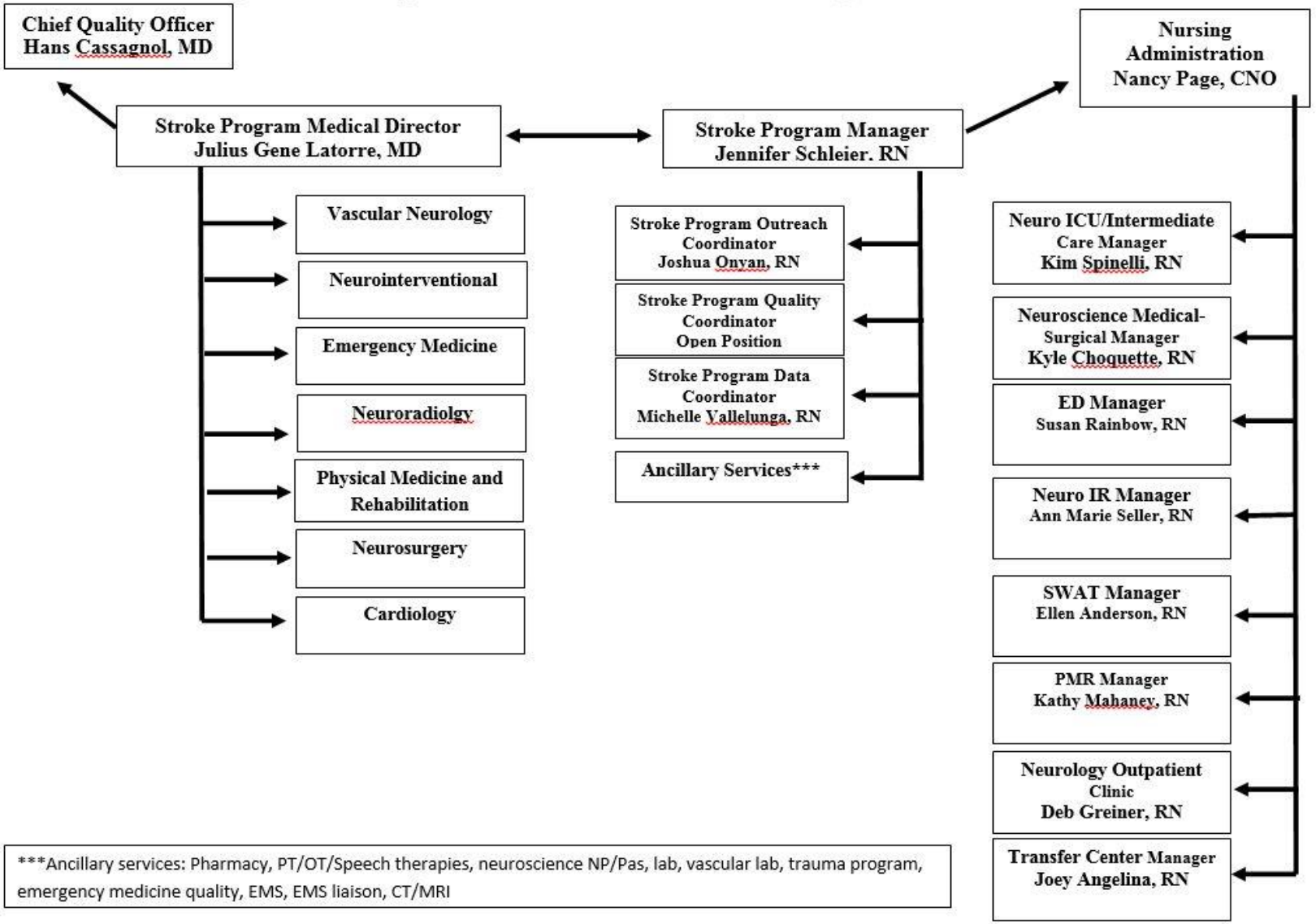
Key Components of a Primary Stroke Center

- Stroke Team
- Education
- 24/7 Capabilities
- Quality assurance/Data registration

Stroke Team

- Identify Stroke Medical Director
- Stroke Coordinator
- Identify team members (ED MDs, RNs, neurologist, stroke unit staff)
- Demonstrate knowledge of stroke care/protocols
- Organizational chart

Upstate Comprehensive Stroke Center Organizational Chart



***Ancillary services: Pharmacy, PT/OT/Speech therapies, neuroscience NP/Pas, lab, vascular lab, trauma program, emergency medicine quality, EMS, EMS liaison, CT/MRI

Stroke Medical Director:
Requirements

- Participation in 2 regional, national, international stroke conferences yearly
- Complete a stroke fellowship
- Eight or more CMEs
- Five or more peer review publications

* 2 are required in 1st year, one required subsequently
* Appointment at multiple designated centers

https://www.health.ny.gov/facilities/hospital/stroke

Education

- Stroke Team (ED, ICU, Stroke unit)
- Other professionals caring for stroke patients (PT, OT, SLP)
- Patients/families
- EMS providers/agencies
- Community education/outreach

Position	# of required hours	Position	# of required hours
Stroke Medical Director	8	Stroke Physicians	8 initial, 4 annual
Stroke Coordinator	8	ED physicians	8 initial, 4 annual
Core Stroke Team	8	ED/9F/9E managers	8
Acute Stroke Team	Based on role	RNs 9F/9E/9G/ED/SWAT/IR	8 initial, 4 annual
Stroke Response Team	Based on role	Adult Inpatient RNs/LPNs	2 initial, 1
		OT/PT/SLT	2

2016 Stroke Education: Stroke Team	Certification	Role	Location
Jennifer Schleier (year 2 and beyond)	8 hours of CE on file	Manager	Stroke Program
Michelle Vallelunga (year 2 and beyond)	8 hours of CE on file	Data Coordinator	Stroke Program
Josh Onyan (Year 1)	8 hours of CE on file	Outreach Coordinator	Stroke Program
Julius Gene Latorre (year 2 and beyond)	4 hours of CE on file	Medical Director	Stroke Program
Antonio Culebras (year 2 & beyond)	4 hours of CE on file	MD	Stroke Unit
Anuradha Duleep (year 2 & beyond)	4 hours of CE on file	MD	Stroke Unit
Elwaleed Elnour (year 2 & beyond)	4 hours of CE on file	MD	Stroke Unit
Carmen Martinez (year 2 & beyond)	4 hours of CE on file	MD	Stroke Unit
Hesham Masoud (year 2 & beond)	4 hours of CE on file	MD	Stroke Unit
Seri-Ann Yonaty (year 2 & beyond)	4 hours of CE on file	NP	Stroke Unit
Michael Vertino	4 hours of CE on file	MD	Stroke Unit
Klaus Werner	4 hours of CE on file	MD	Stroke Unit
Marcia Harris	4 hours of CE on file	NP	Stroke Unit

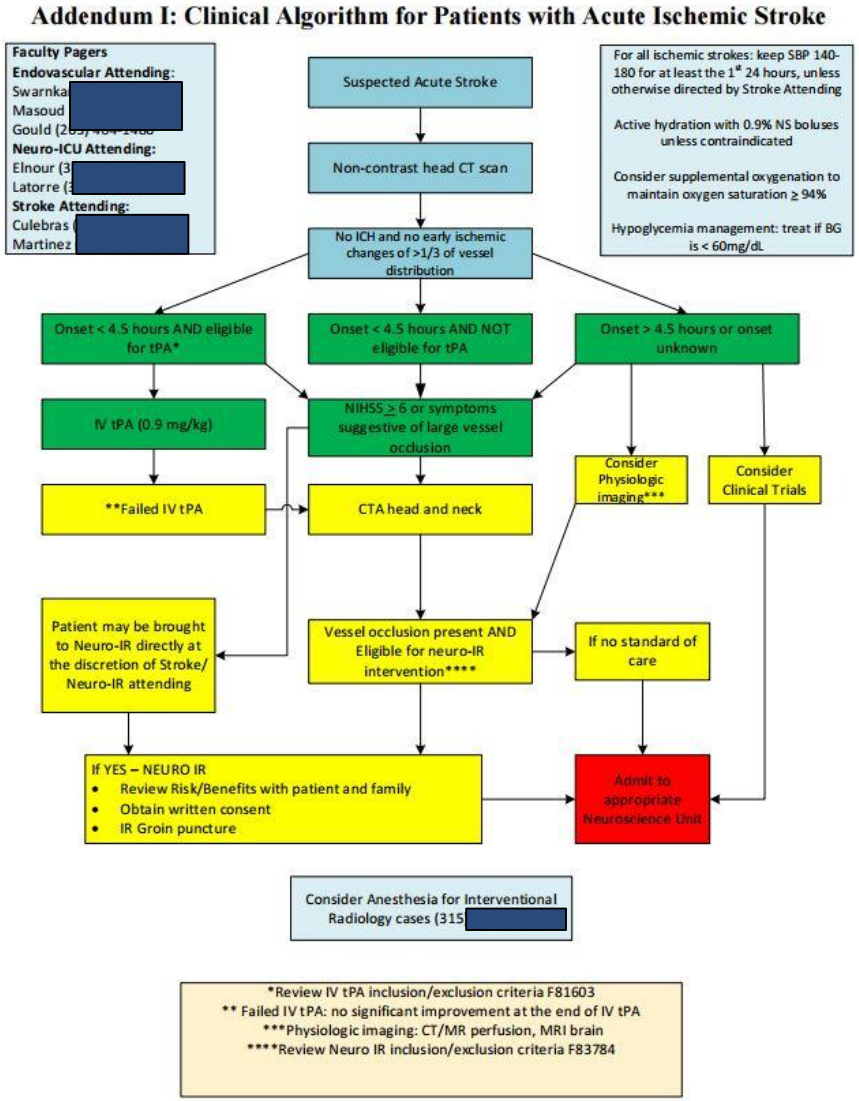
24/7 Capabilities

- Stroke unit: at least 2 beds w/monitoring equipment
- Neuro imaging services (CT scan)
- Lab services
- Neurosurgery (transfer agreements)

Stroke Quality

- Stroke evaluation and written treatment protocols including tPA administration
- Stroke log includes time target data for ischemic, hemorrhagic, TIA, inpatient
- Meet time targets
- Compliance with performance measures
- Established quality assurance groups/stroke quality committee
- Method for corrective action/PI

Stroke Quality: Stroke Care Protocols



Stroke Quality:
NYS DOH Time Targets

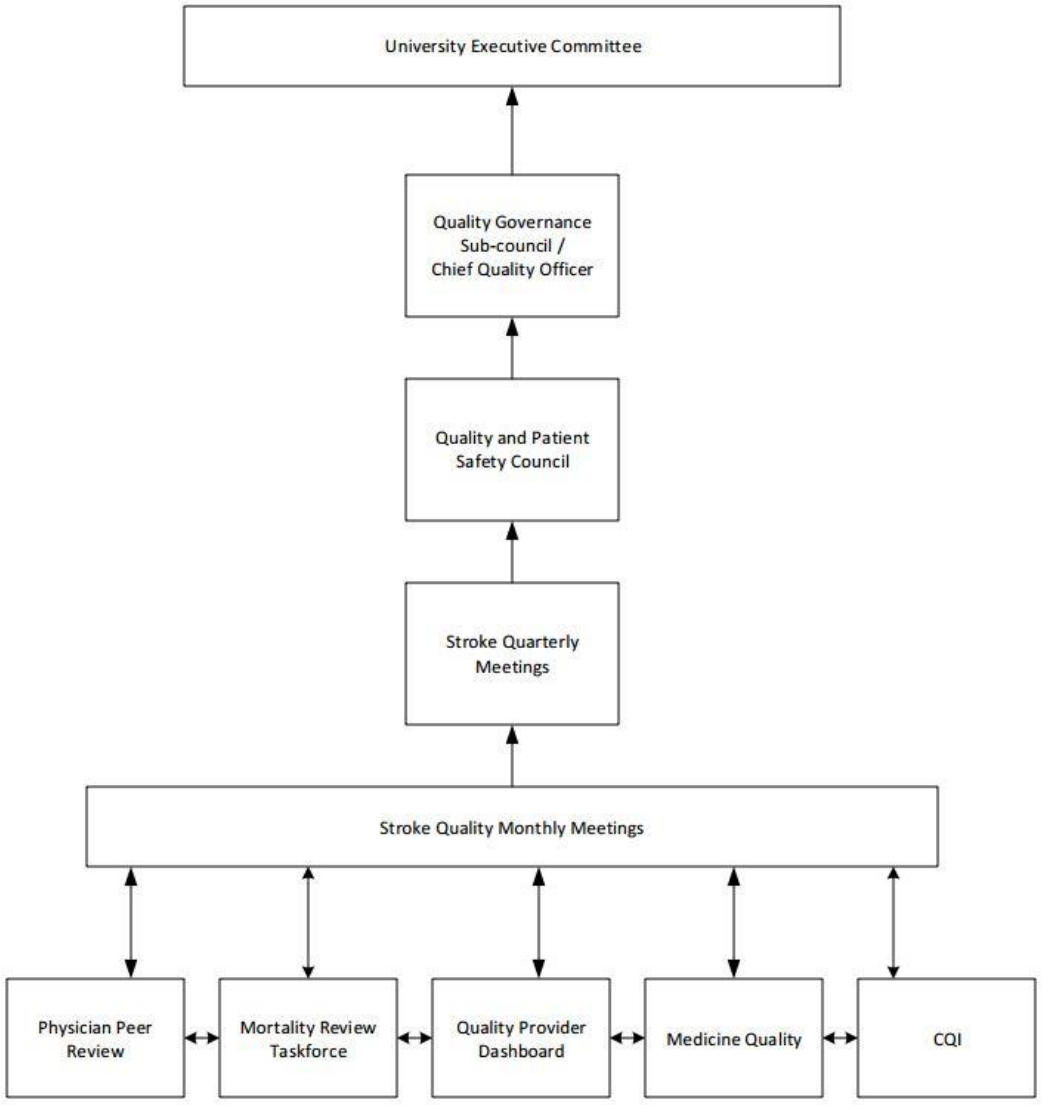
Target Time	Measure
10 minutes	Door to MD
15 minutes	Door to team
25 minutes	Door to CT
45 minutes	Door to CT read
60 minutes	Door to treatment

Stroke Quality:

Performance Measures

Measure	Ischemic	TIA	Hemorrhagic	Not Otherwise Specified
DVT Prophylaxis	X		X	X
Early Antithrombotics	X	X		
Anticoagulation for AF	X	X		
IV tPA (arrive by 2)	X			
Antithrombotics at D/C	X	X		
LDL 100 or ND	X	X		
Dysphagia screening	X		X	X
Stroke education	X	X	X	X
Smoking cessation	X	X	X	X
Rehabilitation considered	X		X	X
NIHSS	X	X	X	X
Discharge destination	X	X	X	X

Stroke Quality Organizational Chart



Stroke Quality:

Process Improvement Project

2016 Upstate Comprehensive Stroke Center Quality Initiative: EMS Quality Committee (sub-committee of Stroke Quality)

Problem: EMS pre-notification of presumptive stroke patients impacts the timeliness of care in the emergency department and the ability to activate the stroke team prior to the patient's arrival. Percent of pre-notification of stroke patients by EMS in 2015 was 45.6%.

Project goal:

- Increase the percent of stroke pre-notification by EMS to 85%
- Increase the percent of stroke team activations prior to arrival to 85%
- Improve methods of pre-notification data collection

Team members and roles:

Jennifer Schleier RN, BSN, Stroke Program Manager: Act as liaison to the Stroke Quality Committee, mentor and guide project leader.

Josh Onyan, RN, Stroke Program Outreach Coordinator: Project Leader, lead group meetings, collect and interpret EMS pre-notification data, provide EMS feedback related to pre-notification

Doug Sandbrook, Upstate EMS liaison: assist with establishing relationships with regional EMS agencies

EMS agency representatives: attend group meetings, identify system weakness or gaps related to stroke pre-notification from EMS perspective, assist with EMS educational efforts to improve pre-notification

Susie Suprenaut, CNYEMS Director

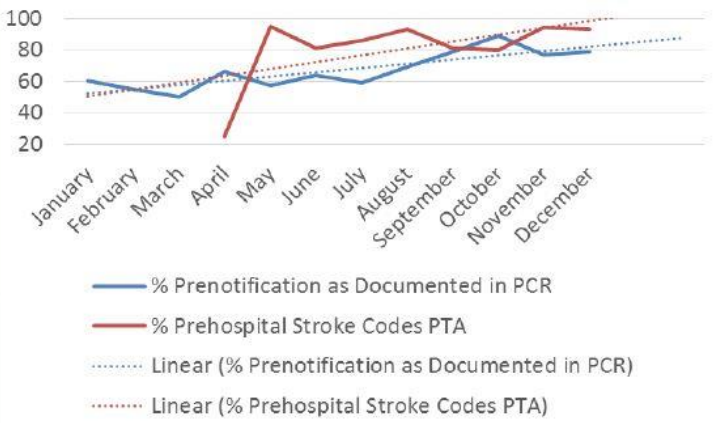
Interventions:

•Identify members, obtain EMS buy-in and establish EMS Stroke Quality work group/committee

•Identify and initiate additional pre-notification data gathering tools

•Create EMS educational plan with pre-notification tools and roll out to EMS agencies across region

•Provide consistent EMS feedback related to stroke pre-notification data



Progress to date: 2016 cumulative stroke pre-notification by EMS percentage is 71.3%. EMS stroke pre-notification forms were released in the ED in April of 2016 as an additional data collection tool. Educational materials regarding pre-notification were provided to regional EMS agencies in September of 2016. There has been a slow but steady increase in the percentage of pre-notified stroke patients since implementation of the group. There has also been a significant rise in the number of stroke codes activated prior to arrival based on EMS pre-notification which has contributed to a slow steady reduction in door to needle times (data available upon request).

Lessons learned: Achievement of our goal of 85%pre-notification along with an 85% stroke code PTA rate will take time and perseverance of this work group. Stroke centers will need to develop a multi-faceted approach to improving EMS pre-notification rates and will need to engage EMS in participation on such groups.

Next steps: The next steps are to do an in-depth review of those stroke patients who were not pre-notified by EMS to identify consistencies. This will allow for the planning and implementation of targeted EMS educational sessions and materials to reach our goals.

Stroke Quality:

Corrective action/PI

UPSTATE
COMPREHENSIVE STROKE CENTER

Confidential information: Protected by NYS Ed, Law 6527& Public Health Law 280-5
NO DISCLOSURE OF BELOW INFORMATION IS ALLOWED.

Acute Stroke Case Review
Stroke Program Medical Director: Dr. Gene Latorre, MD **Stroke Program Manager**: Jennifer Schleier, RN, BSN, CCRN

	CASE REVIEW					DISCUSSION/DECISION/ACTIONS
Adm Date: [redacted] **MRN:** [redacted] **PMH:** clotting disorder, PE, MS, hypoxic brain injury **Meds:** no blood thinners or antiplatelet **Time LKW:** 1425 **EMS Run No:** 17236	**Chief Complaint/Presentation:** 48 yr old male, R side weakness facial droop, sensory loss, slurred speech, aphasia **EMS Provider**: AMR **CPSS positive:** Y **Pre-notification:** Y **NIHSS on admission:** 19 **NIHSS post Tx:** 2 **IVTPA eligible:** Y **IA/MER eligible:** Y **Consent documentation:** Yes documented					*Pre-notification call made with all pertinent information. Patient transported ALS with interventions completed on route.*
Time Targets: (Bold=DNV)	Clock Time	Standard	Does not meet standard	Meets standard	Exceeds standard	*Concerns:* *None*
Px arrival	15:27					
Stroke Page	15:24				PTA	
ED MD	15:28	**10 min**			-1min	
Neuro MD	15:30	**15 min**			-3 min	
CT I- complete	15:33	**25 min**			-5 min	
CT report	15:50	**45 min**			-23 min	
TPA order	15:41					
TPA delivery	15:47					
TPA bolus	15:47	**60 min**			-20 min	
CTA complete	15:33	**60 min**				
Groin puncture	16:18	120 min			-51 min	
Recanal Time	17:02	150 min			-95 min	
Final Diagnosis:	Acute Ischemic Stroke					

Data Collection

- GWTG database (not required)
- Excluded data
- Internal database
- Hospital specific goals based on strengths and weaknesses
- Be as concurrent as possible

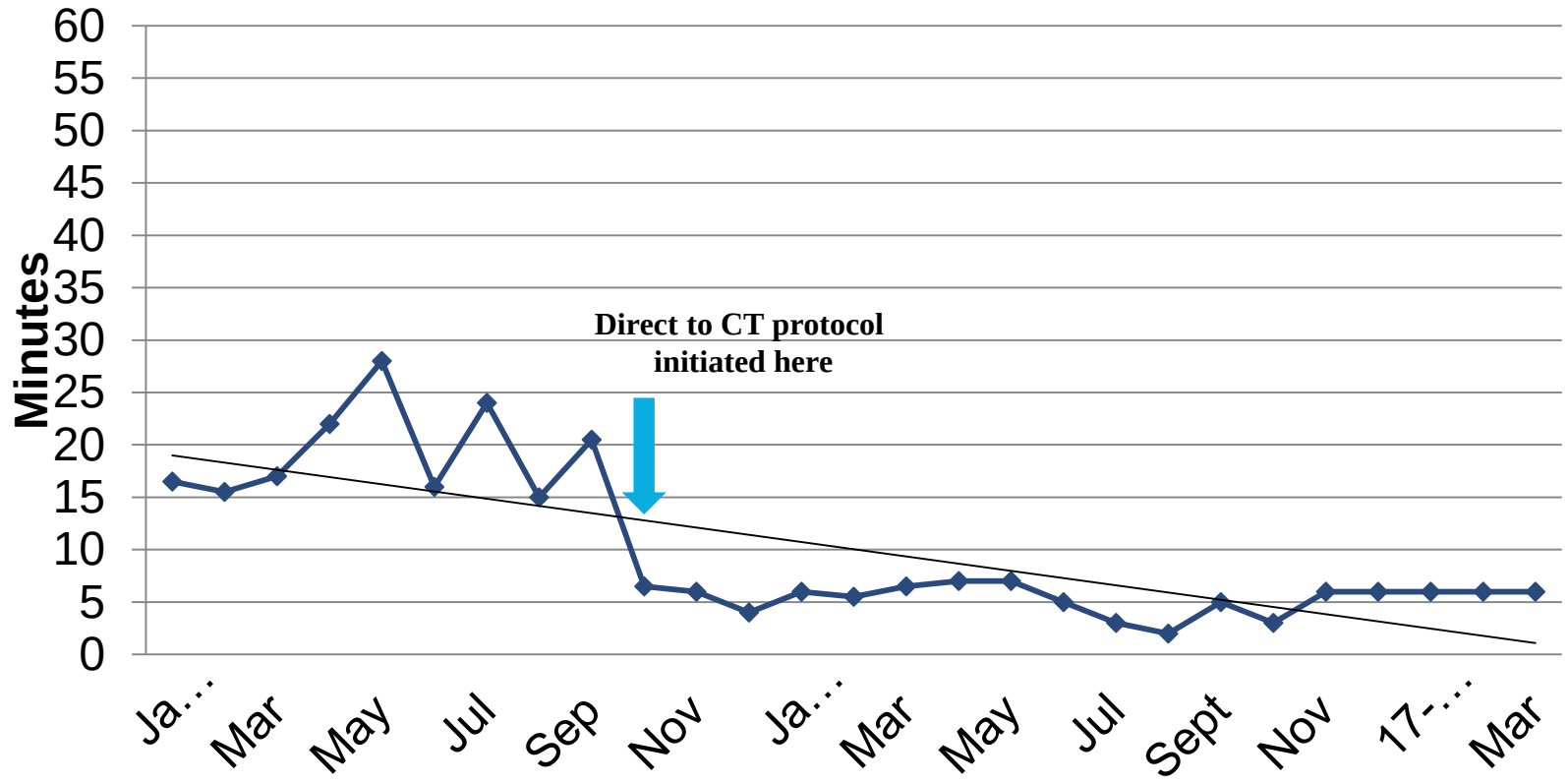
EMS

- Collaborative relationship
- Track EMS pre-notification and content of call
- Provide feedback and loop closure
- Provide educational events (2 per year)

ED Stroke Code

- Activate for any actual or presumptive stroke
- Prior to arrival whenever possible
- ED attending evaluated upon arrival
- Send patient direct to CT when possible

Direct to CT


Minutes
60
55
50
45
40
35
30
25
20
15
10
5
0
Direct to CT protocol initiated here
Ja…
Mar
May
Jul
Sep
Nov
Ja…
Mar
May
Jul
Sept
Nov
17-…
Mar

Overcoming Barriers to Stroke Designation

- Administrative support to provide resources (written)
- Gap analysis
- Partner with an experienced stroke center
- Establish telestroke

Thank you…..

Jennifer Schleier

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315-464-2661