

The 12th Annual NECC Summit



State Breakout Sessions

Connecticut

GWTG-Stroke Data

January 2016 – December 2016

Agenda

1. Review data from GWTG-Stroke
2. Review Mission: Lifeline stroke triage algorithm
3. Review region's current protocol(s) & discuss next steps

Preview of GWTG-Stroke Data

Data by NECC State: Slides 5 – 12

- Stroke Diagnosis Type
- Arrival Mode
- Last Known Well to ED Arrival Times
- Stroke Care Measures
 - Pre-notification by EMS
 - Door to CT \leq 25min
 - Ischemic Stroke patients who received IV tPA
 - Ischemic Stroke patients who received IA catheter-based reperfusion
 - Time to IV tPA – 60min
 - Time to IV tPA – 45min

Notes:

- This data is a reflection of hospital documentation of pre-hospital care, and may not be a true reflection of care provided by EMS.
- At the present time, GWTG-Stroke doesn't collect data specific to LVO patients.

CT Data

Stroke Diagnosis Type, 2016

by Region

% of patients (number of patients)



Stroke Diagnosis Type	NECC States Region							
	ME, NH, & VT	MA	RI	CT	NY	NJ	North-east	Nation
Ischemic Stroke	69.7% (2,824)	66.8% (10,252)	74.6% (1,743)	71.5% (3,928)	60.5% (29,546)	62.2% (10,771)	63.7% (83,004)	67.7% (384,294)
TIA	6.6% (269)	18.4% (2,819)	7.1% (165)	9.7% (534)	20.1% (9,825)	20.9% (3,620)	18.7% (24,373)	12.5% (70,985)
Subarachnoid Hemorrhage	4.0% (164)	3.0% (459)	3.5% (81)	3.8% (207)	3.5% (1,725)	3.5% (600)	3.4% (4,430)	3.8% (21,812)
Intracerebral Hemorrhage	13.1% (532)	8.3% (1,279)	13.4% (312)	10.4% (573)	10.2% (4,990)	10.5% (1,823)	10.1% (13,143)	11.1% (63,081)
Stroke, not otherwise specified	1.1% (43)	0.7% (102)	0.4% (9)	0.1% (7)	0.4% (193)	0.2% (31)	0.5% (696)	1.0% (5,848)
Total cases in GWTG	4,054	15,342	2,337	5,497	48,815	17,315	130,251	567,714

• The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

• Cases with a “missing diagnosis”, “no stroke related diagnosis” or “elective carotid intervention only” are not listed here, therefore the sum of the number of patients within each diagnosis may not equal the “Total cases in GWTG” for each region.

Arrival Mode, 2016

by Region

% of patients (number of patients)



Arrival Mode	Region							
	NECC States						North-east	Nation
	ME, NH, & VT	MA	RI	CT	NY	NJ	North-east	Nation
EMS from home/scene	39.5% (1,550)	54.6% (7,994)	51.4% (1,169)	53.1% (2,735)	55.2% (24,340)	53.6% (8,856)	52.2% (63,510)	45.8% (245,777)
Private transport/taxi/other from home/scene	25.7% (1,008)	29.0% (4,250)	22.3% (507)	27.3% (1,406)	31.3% (13,793)	38.0% (6,275)	32.5% (39,585)	33.8% (181,265)
Transfer from other hospital	23.8% (935)	15.4% (2,262)	25.8% (587)	18.4% (948)	12.8% (5,621)	7.0% (1,162)	13.8% (16,825)	18.3% (98,298)
Not documented or unknown	1.1% (43)	0.8% (124)	0.5% (12)	1.1% (57)	0.7% (293)	1.4% (236)	0.8% (965)	0.8% (4,447)
Total N	3,921	14,646	2,276	5,148	44,081	16,529	121,646	537,005

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• Cases with a “blank” for Arrival Mode are not listed here, therefore the sum of the number of patients for each arrival mode may not equal the “Total N” for each region.

Last Known Well to ED Arrival Times, 2016

(For patients who arrive by EMS from home/scene),

by Region

% of patients (number of patients)



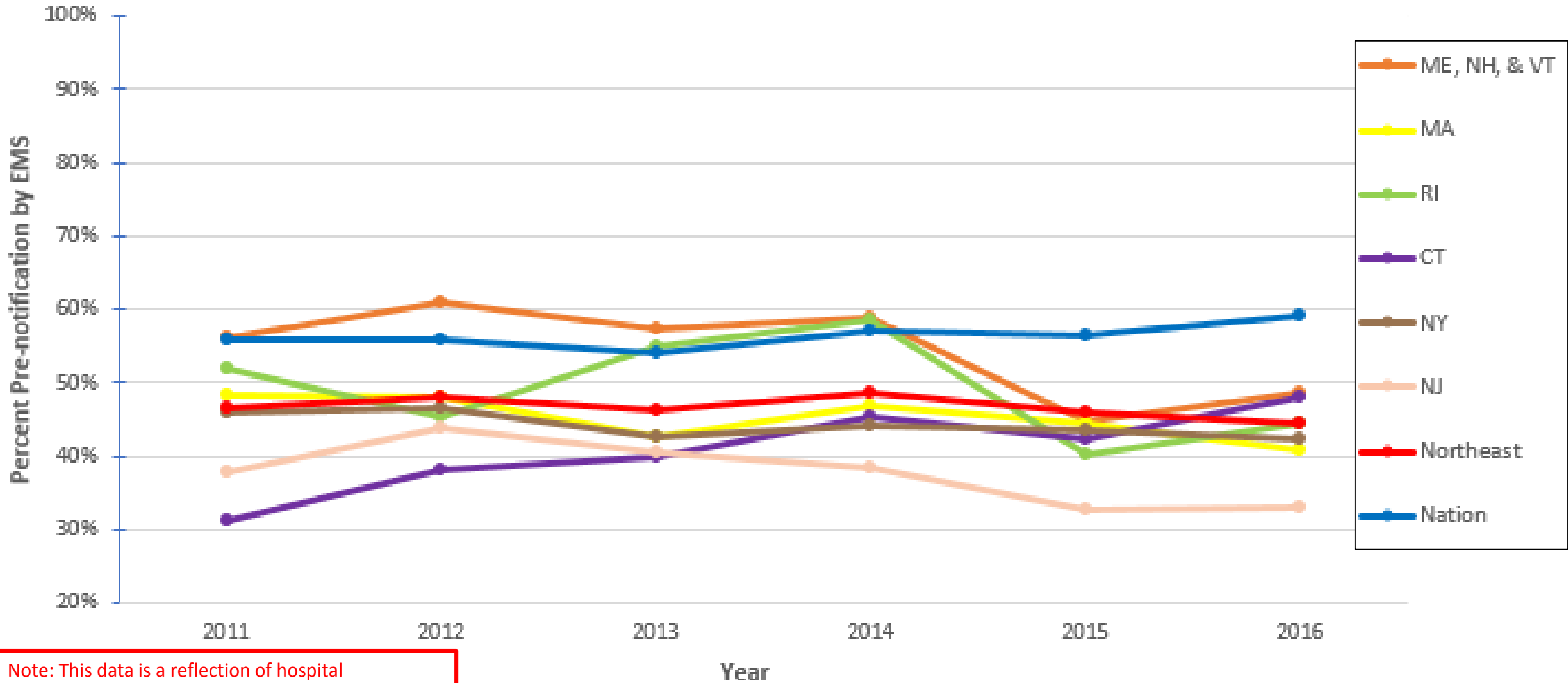
LKW to Arrival Time Group	Region							
	NECC States						North-east	Nation
	ME, NH, & VT	MA	RI	CT	NY	NJ		
0-30 min	5.0% (76)	5.4% (428)	3.7% (43)	3.8% (102)	3.4% (830)	3.0% (266)	3.7% (2,307)	4.3% (10,550)
31-60 min	13.2% (202)	14.2% (1,129)	11.5% (134)	13.9% (378)	11.5% (2,792)	13.4% (1,171)	12.5% (7,876)	12.9% (31,238)
61-120 min	12.8% (196)	13.2% (1,046)	10.7% (125)	13.3% (359)	13.3% (3,214)	14.1% (1,233)	13.5% (8,535)	13.1% (31,797)
121-180 min	5.3% (81)	6.2% (492)	5.1% (60)	4.5% (122)	6.2% (1,497)	6.0% (524)	6.0% (3,781)	5.8% (14,299)
181-540 min	14.4% (220)	13.1% (1,037)	15.3% (179)	13.4% (363)	13.4% (3,259)	14.2% (1,231)	13.3% (8,428)	13.2% (32,166)
> 540 min	12.7% (194)	13.5% (1,075)	14.9% (174)	10.8% (294)	13.9% (3,372)	14.3% (1,249)	13.5% (8,525)	13.3% (32,310)
LKW or Arrival Time unknown, or Arrival \geq 2 days after LKW	38.0% (583)	35.8% (2,848)	39.1% (455)	40.9% (1,109)	39.6% (9,595)	36.5% (3,192)	38.7% (24,430)	38.4% (93,343)
Total N	1,533	7,958	1,166	2,713	24,205	8,755	63,071	24,280

• The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

• Cases with documented arrival and LKW time, and LKW to arrival \geq 2 days, will be included in both the ">540 min" and "LKW or Arrival Time unknown, or Arrival \geq 2 days after LKW" categories.

Pre-notification by EMS, 2011-2016

(For patients who arrive by EMS from home/scene),
by Region

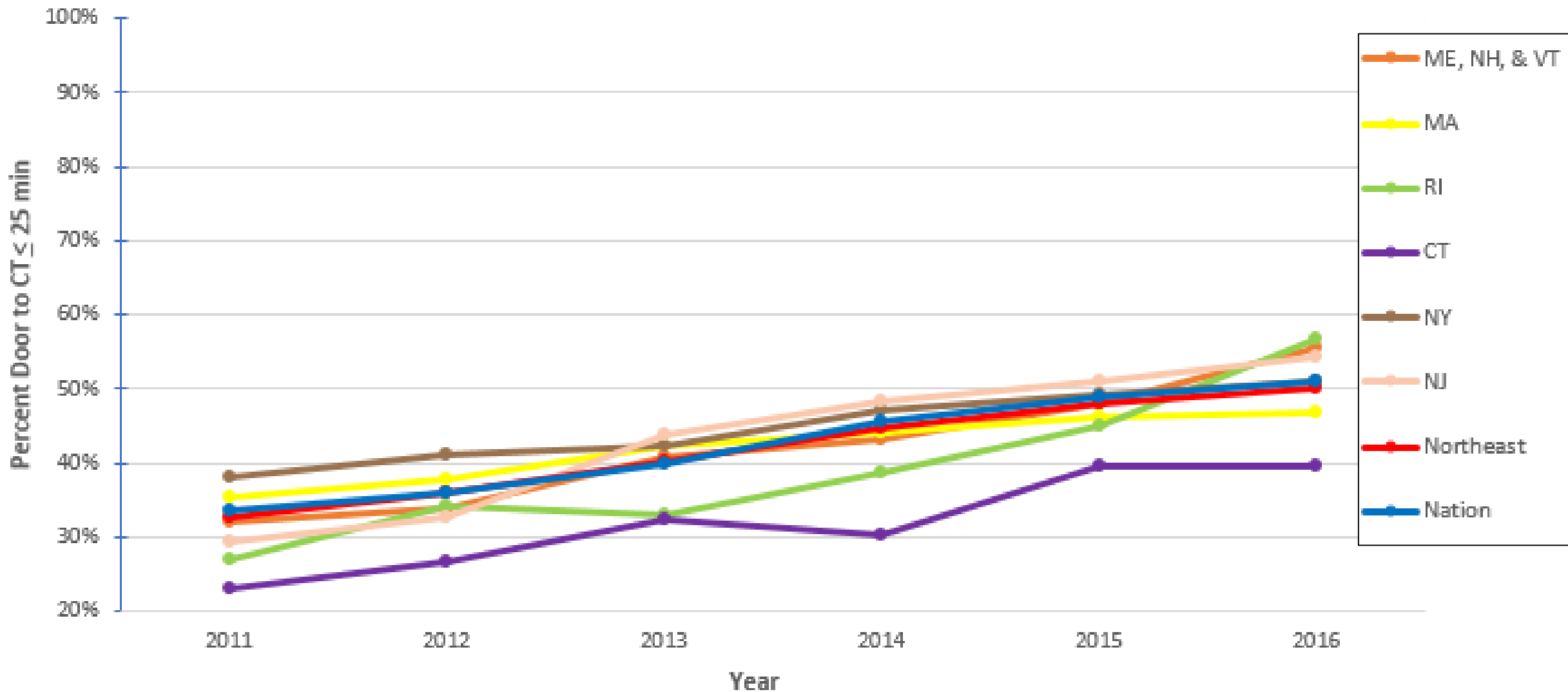


Note: This data is a reflection of hospital documentation of pre-hospital care, and may not be a true reflection of care provided by EMS.

• The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

Door to CT \leq 25 min, 2011-2016

(For patients who arrive by EMS from home/scene),
by Region



• The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

Stroke Care Measures, 2016

(For patients who arrive by EMS from home/scene),
by Region
% of patients (number of patients)



Measure	Region							
	NECC States						North-east	Nation
	ME, NH, & VT	MA	RI	CT	NY	NJ		
Pre-notification by EMS	48.6% (632)	40.8% (3,249)	44.4% (488)	48.0% (1,264)	42.2% (10,263)	32.9% (2,913)	44.4% (27,914)	59.0% (141,001)
Door to CT ≤ 25 min	55.4% (679)	46.7% (2,917)	56.8% (557)	39.7% (866)	51.1% (9,603)	54.4% (3,806)	50.1% (24,881)	51.1% (101,239)

- The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

Additional Stroke Care Measures, 2016

by Region
% of patients (number of patients)



Measure	Region							
	NECC States						North-east	Nation
	ME, NH, & VT	MA	RI	CT	NY	NJ		
Ischemic Stroke patients who received IV tPA (excluding patients with stroke after arrival)	8.9% (251)	10.1% (1,035)	11.5% (200)	10.1% (397)	10.6% (3,114)	12.4% (1,336)	10.1% (8,376)	11.0% (42,165)
Ischemic Stroke patients who received IA catheter-based reperfusion (excluding patients with stroke after arrival)	1.8% (51)	2.6% (270)	8.4% (146)	2.9% (113)	3.4% (986)	2.8% (305)	3.2% (2,622)	3.3% (12,584)

- The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania
- IA catheter-based treatment includes both pharmacologic thrombolytic therapy and mechanical devices.

- Patients who receive IV tPA or IA catheter-based reperfusion at a non-GWTG hospital, who are subsequently transferred to a GWTG hospital, would not be captured in the measures for % of patients who received IV tPA, or IA catheter-based reperfusion.



Additional Stroke Care Measures, 2016

by Region
% of patients (number of patients)

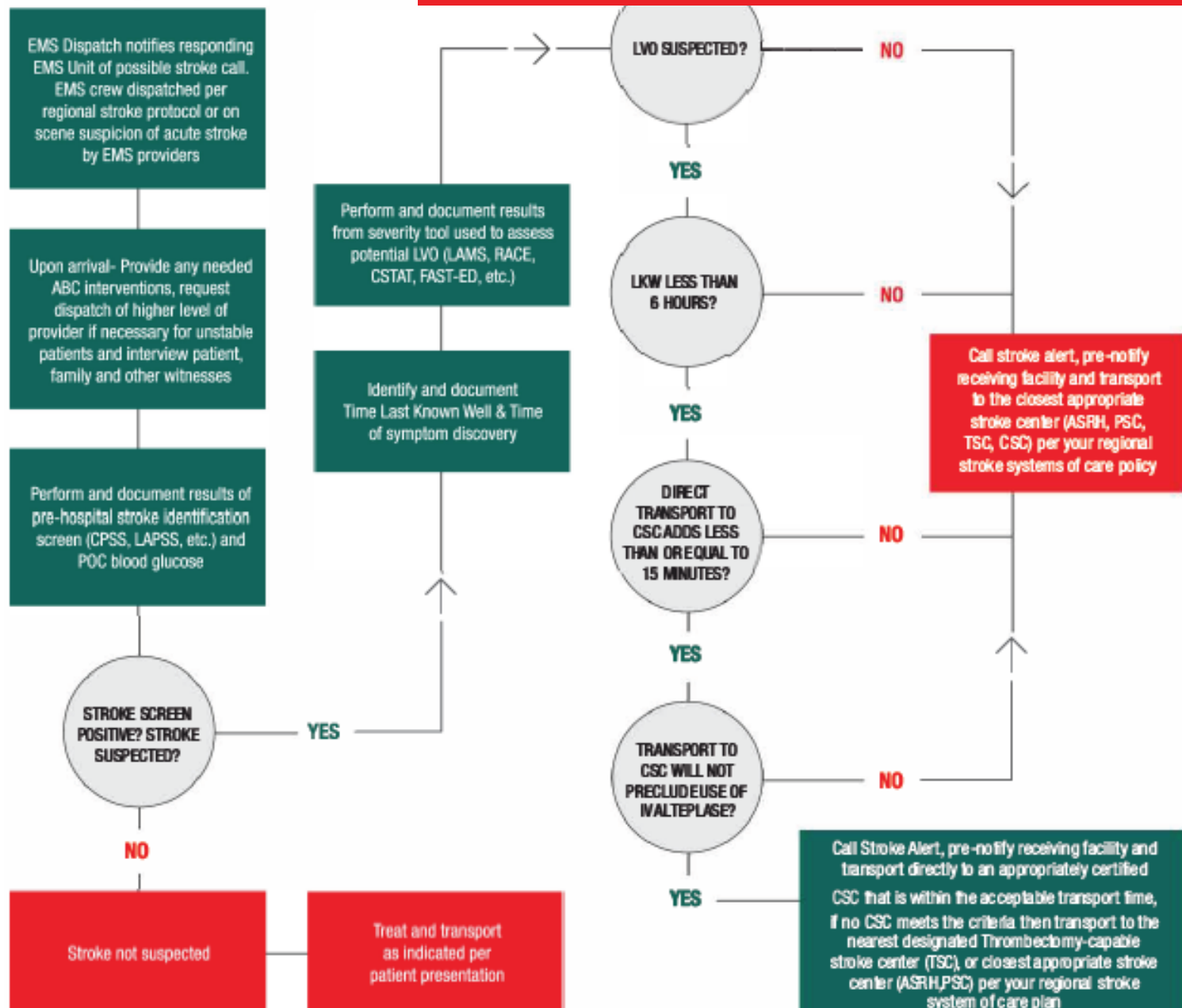
Measure	Region							
	NECC States						North-east	Nation
	ME, NH, & VT	MA	RI	CT	NY	NJ		
Time to IV tPA - 60min (in eligible patients)	63.9% (124)	63.2% (494)	82.1% (124)	70.6% (202)	81.4% (1,869)	78.5% (832)	76.3% (4,801)	78.4% (25,233)
Time to IV tPA - 45min (in eligible patients)	27.3% (53)	33.5% (262)	49.0% (74)	34.6% (99)	45.2% (1,037)	48.6% (515)	41.7% (2,624)	44.9% (14,457)

- The Northeast region benchmarking group includes the 8 NECC states and Pennsylvania

SEVERITY-BASED STROKE TRIAGE ALGORITHM FOR EMS



MISSION: LIFELINE



ON SCENE

- Interview patient, family members and other witnesses to determine Last Known Well (LKW) time and time of Symptom Discovery.
- Attempt to identify possible stroke mimics (eg. seizure, migraine, intoxication) and determine if patient has pre-existing substantial disability (need for nursing home care or inability to walk without help from others).
- Encourage family to go directly to Emergency Department if not transported with patient and obtain mobile number of next of kin and witnesses.
- If Mobile Stroke Unit available—follow Mobile Stroke Unit Protocol.
- Each EMS agency should utilize a published and validated stroke screen to assess patients with non-traumatic onset of focal neurologic deficits and validated tool to assess possible Large Vessel Occlusion (LVO).
- Patients who are eligible for IV Alteplase if transported to nearest Acute Stroke Ready Hospital (ASRH) or PSC should not be rerouted to a CSC or Thrombectomy-capable Stroke Center if doing so would result in a delay that would make them ineligible for IV Alteplase.
- Collect a list of current medications (especially anticoagulants) and obtain patient history including co-morbid conditions (eg. serious kidney or liver disease, recent surgery, procedures or stroke) that may impact treatment decisions.

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Severity-Based Stroke Triage Algorithm for EMS

From the webinar,
“Mission: Lifeline Stroke presents the Severity-
based Stroke Triage Algorithm for EMS”
Peter D. Panagos, MD, FAHA, FACEP
Lee Schwamm, MD, FAHA
Joe Acker, EMT-P, MPH

* What It Is:



Evidenced-based best-practice, multi-specialty review of currently available data for time-dependent benefits of IV tPA and EVT, stroke scale predictive power and EMS Stroke Triage capabilities

* What It Is Not:



Prescriptive template for every EMS region. Requires customization to local resources and geography

Key Assumptions

From the webinar,
“Mission: Lifeline Stroke presents the Severity-
based Stroke Triage Algorithm for EMS”
Peter D. Panagos, MD, FAHA, FACEP
Lee Schwamm, MD, FAHA
Joe Acker, EMT-P, MPH

- * Balance access to EVT in suspected LVO patients with potential harm of delay in IV tPA
- * Minimal disruption in clinical work-flow to get EMS on board
- * More PSCs (N=1182) than CSCs (N=118) and ASRH (N=24)
- * Avoid overcrowding at CSC and reducing expertise at PSC
- * No single Severity Tool is superior. Aim for uniformity by region
- * Hemorrhagic stroke triage guided by symptom severity
- * Acceptable delay for re-routing still unclear. RCTs underway
- * Every 15 minute delay increases mortality and sICH
- * In rural settings, longer times (20-30 min?) may be reasonable
- * Update algorithm when better evidence exists

CT EMS Stroke Triage Protocol

- Version 2 of Statewide EMS Protocols
- Protocol Subcommittee of CEMSMAC
- Allowance for regional/local needs – “Please refer to your local Stroke agreement plan.”

Similarities and/or Differences with National Mission: Lifeline Triage Algorithm



Next Steps as a Region?

- What is best way to promote development/implementation of best practice?
- How do we promote development of/access to clinical resources guided by the best practice?

Questions, comments, needs...

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