

Regional Stroke Survey Results

July 21, 2023

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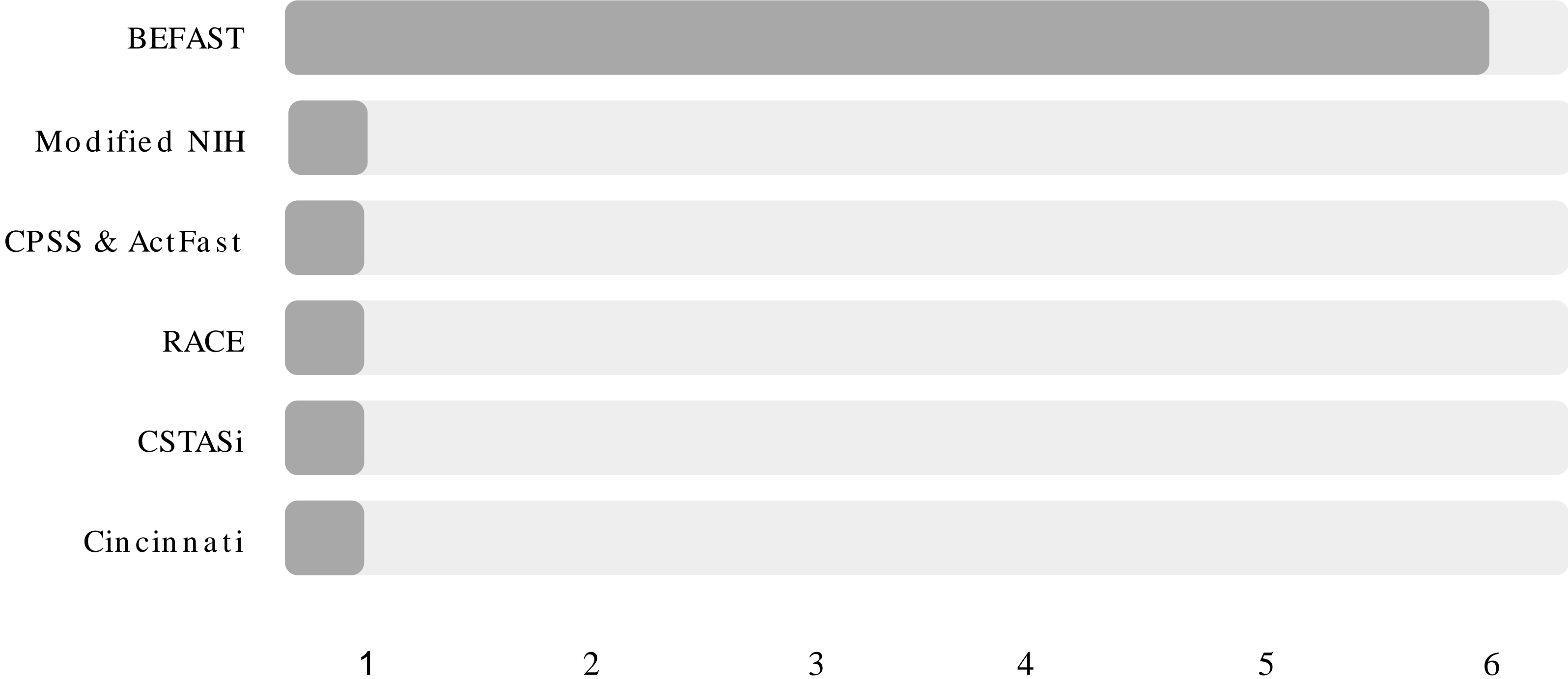
Introduction

TEMS sent a survey to all Regional PI Coordinators to find out about current stroke care practices across the state. Contributory EMS councils include Blue Ridge, Central Shenandoah, Loud Fairfax, Northern VA, Old Dominion, Peninsulas, Rappahannock, Southwest, Thomas Jefferson, Tidewater, and Western.

Following slides present a compilation of responses to the survey questions.

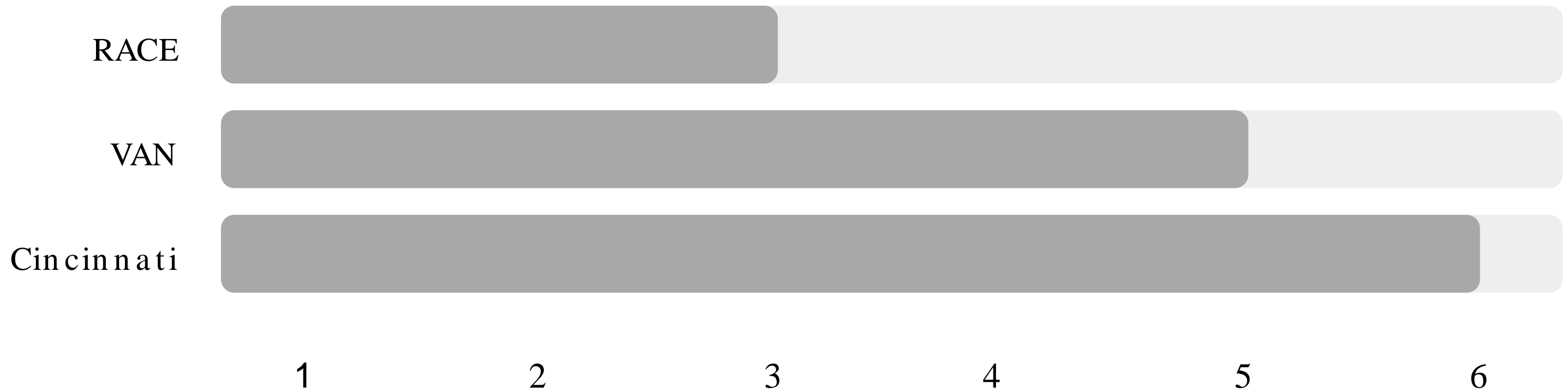
What stroke screening tool do your agencies use prehospital?

(11 Responses)



What stroke severity tool do your agencies use prehospital?

(14 Responses)



Do your agencies use a stroke screening AND stroke severity tool?

(11 Responses)



Is there an on-scene time requirement for your providers to follow on prehospital suspected stroke patients?

(11 Responses)

YES = 6

NO = 5

If yes, please write what it is.

(6 Responses)

No more than 10 minutes x2

Less than 20 minutes x2

Less than 15 minutes

45 minutes

When you are determining scene time, are you starting the clock when the crew arrives on scene or when they arrive at the patient?

(10 Responses)

CREW ON SCENE = 7

CREW AT PATIENT = 3

Is there a transportation destination policy in place for your agencies to reference for suspected stroke patients?

YES = 11

Do you have a formal process for calling in a stroke alert to the receiving hospital?

(11 Responses)

YES = 8

NO = 3

Do your providers use the words 'Stroke Alert' when calling in the radio report?

(11 Responses)

YES = 8

NO = 3

What percentage of your suspected stroke patients do providers check the blood glucose?

(11 Responses)

- 90-100% 7 responses
- 80-90% 2 responses
- 50-80% 0 responses
- 40-50% 2 responses
- Less than 40% 0 responses

Do any of your agencies complete a blood draw for stroke patients' pre-hospital?

(15 Responses)

YES = 8

NO = 7

Bon Secours Maryview Medical Center EMS Blood Draw and CT Data

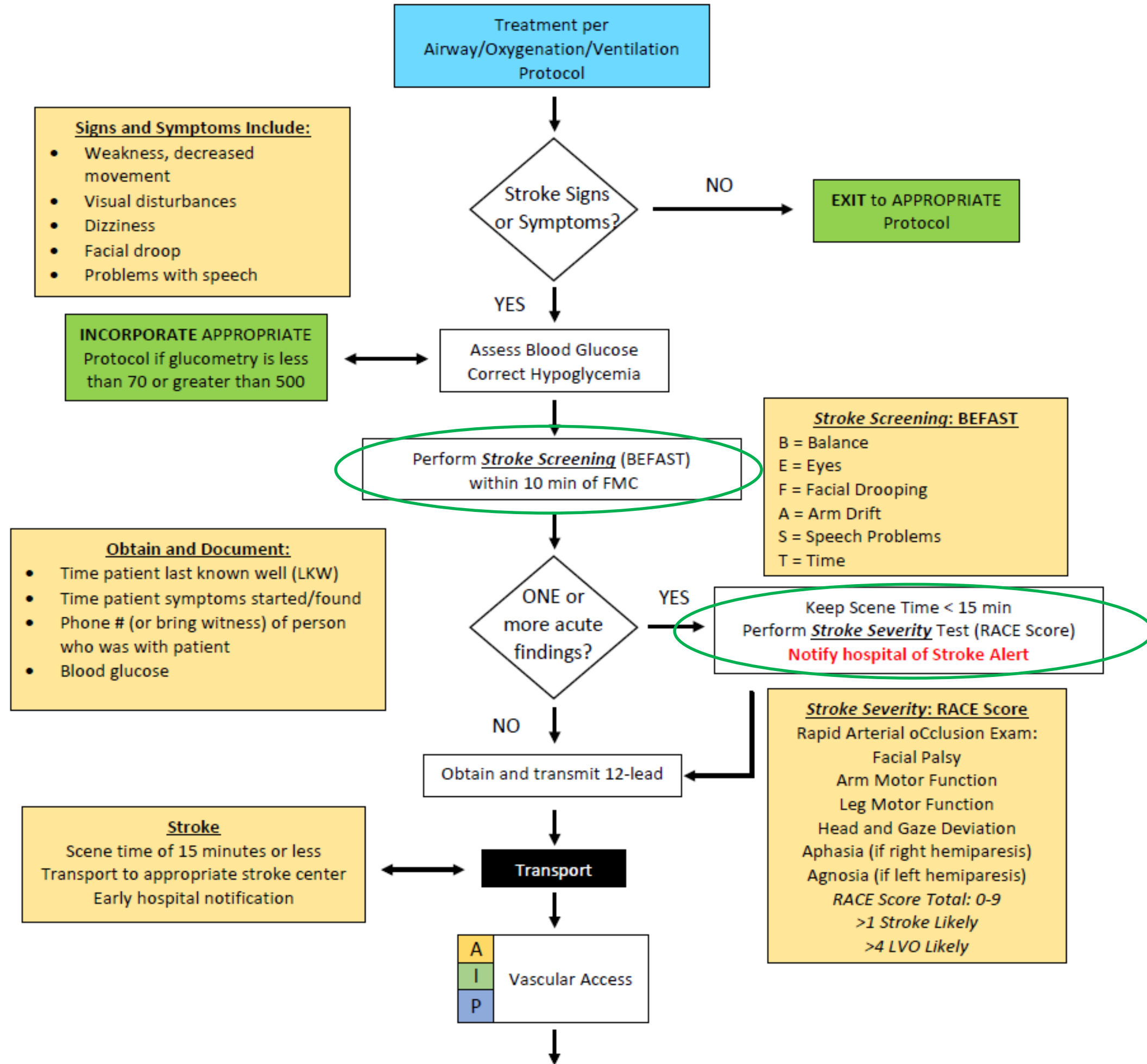
With EMS Blood Draw

- Door to CT Average – 14.63 minutes
- Door to Decision Average – 24.27 minutes
- Arrival to Result Average – **26.24 minutes**

Without EMS Blood Draw

- Door to CT Average – 31.72 minutes
- Door to Decision Average – 33.39 minutes
- Arrival to Result Average – **58.96 minutes**

TEMS Stroke/CVA Protocol



TEMS Stroke/CVA Protocol

GOALS

- Determine neurological loss and deficits within 10 minutes of First Medical Contact (FMC).
- Assure adequate oxygenation, ventilation.
- Transport patient to appropriate destination and provide early notification of Stroke Alert.

TREATMENT

- Perform Stroke Screening (BEFAST) if stroke signs/symptoms are present
 - One or more acute findings indicates a positive stroke screening
- Perform Stroke Severity (RACE Score) if Stroke Screening is positive
 - Transport destinations should not be based on Stroke Severity scores
- Do not delay transport for non-life-saving procedures.
- Notify the hospital of any blood thinners:
 - Anticoagulants include: Heparin, Lovenox, Coumadin, Eliquis, Xarelto, Paradaxa, etc.
 - Antiplatelets include: Aspirin, Plavix, Effient, Aggrenox, Ticlid, etc.

SPECIAL CONSIDERATIONS

- Stroke victims are at high risk for airway compromise.
- Hypoxemia will worsen stroke outcomes.
- Patients with resolution of stroke symptoms should still be transported.
- Refer to the TEMS Stroke Triage Plan for more information.

What is the overall EMS perception on how the Emergency Department responds to stroke alerts?

(10 Responses)

- Overall, we feel that our hospitals do a sufficient job with stroke alerts.
- Providers seem to be confident that the facilities will either take care of the patients or for those whose closest facilities are acute, that the patient will be transferred in a timely manner
- Excellent
- Not the best
- Both hospitals in the region take strokes seriously and treat all prehospital stroke alerts as alerts until a physician deems otherwise.
- Mixed; sometimes the ED staff is waiting at the Comm box for crew to arrive, other times the crew will have to wait 10-15+ min at the Comm box for a neuro assessment by physician before getting a room vs "go straight to CT" assignment.
- Some facilities take alerts seriously and work collaboratively to ensure care. Other facilities are less collaborative.
- I can only speak to my perception in one county, and then only to the hospitals where I run. The two hospitals where I take my EMS patients respond quickly and seriously to our stroke alerts.
- How receiving hospitals react to the stroke alert depends on the receiving hospital recognizing the provider that is calling in the report.
- Patient straight to CT at most facilities

For the timeframe of July 1, 2022 - June 30, 2023: What percentage of your stroke patients went to a Comprehensive stroke center, a Primary stroke center, and an Acute stroke center?

(10 Responses)

- Comprehensive- 5, Primary- 80 Acute- 15
- Approx 50% go to a comprehensive, with approx 35% primary and 15% acute
- Primary = 57% Comprehensive = 43%
- Majority
- The majority go to a primary since that's all we have in our region
- Comprehensive - 100, Primary 6, Acute - 0, 5 patients went to a facility with no designation
- This answer would take a lot of time for me to discover; I'd have to search every EMS agency in every county we represent, filtering their patients by confirmed/suspected stroke (do you also want TIAs as that's a different field) then filter that by hospital classification.
- 15%-Comprehensive, 57%-Primary, 0%-Acute, 28%-Local, TPA capable
- 35% stroke ready, 28% primary, 31% thrombectomy capable, 2% comprehensive
- Acute 5%, Primary 70%, Comprehensive 25%

OEMS Stroke Incidents

Table 8. Stroke Patients by Destination Hospital Stroke Certification Level and EMS Regional Council, First Quarter 2023, Virginia

EMS Regional Council	Number Stroke Patients	Number (Percent) of Patients Transported to Non-Certified Hospitals	Number (Percent) of Patients Transported to Acute Stroke Ready Facilities	Number (Percent) of Patients Transported to Primary Stroke Centers	Number (Percent) of Patients Transported to Thrombectomy Capable Hospitals	Number (Percent) of Patients Transported to Comprehensive Stroke Centers
Blue Ridge	445	128 (28.8)	0 (0.0)	8 (1.8)	284 (63.8)	25 (5.6)
Central Shenandoah	234	77 (32.9)	0 (0.0)	139 (59.4)	3 (1.3)	15 (6.4)
Lord Fairfax	158	59 (37.3)	0 (0.0)	98 (62.0)	0 (0.0)	1 (0.6)
Northern Virginia	1,042	165 (15.8)	26 (2.5)	336 (32.2)	158 (15.2)	357 (34.3)
Old Dominion	1,831	564 (30.8)	5 (0.3)	547 (29.9)	10 (0.5)	705 (38.5)
Peninsulas	384	39 (10.2)	0 (0.0)	138 (35.9)	0 (0.0)	207 (53.9)
Rappahannock	472	91 (19.3)	0 (0.0)	310 (65.7)	2 (0.4)	69 (14.6)
Southwest Virginia	382	327 (85.6)	1 (0.3)	42 (11.0)	12 (3.1)	0 (0.0)
Thomas Jefferson	226	18 (8.0)	0 (0.0)	7 (3.1)	3 (1.3)	198 (87.6)
Tidewater	1,118	104 (9.3)	34 (3.0)	649 (58.1)	16 (1.4)	315 (28.2)
Western Virginia	710	252 (35.5)	30 (4.2)	199 (28.0)	218 (30.7)	11 (1.5)
Out of State	40	29 (72.5)	0 (0.0)	0 (0.0)	10 (25.0)	1 (2.5)
Total	7,042	1,853 (26.3)	96 (1.4)	2,473 (35.1)	716 (10.2)	1,904 (27.0)

OEMS Stroke Incidents

Table 9. Stroke Patients with Symptom Onset Between 4.5 and 24 Hours Prior to EMS Arrival by Destination Hospital Stroke Certification Level and EMS Regional Council, First Quarter 2023, Virginia

EMS Regional Council	Number Stroke Patients	Number (Percent) of Patients Transported to Non-Certified Hospitals	Number (Percent) of Patients Transported to Acute Stroke Ready Facilities	Number (Percent) of Patients Transported to Primary Stroke Centers	Number (Percent) of Patients Transported to Thrombectomy Capable Hospital	Number (Percent) of Patients Transported to Comprehensive Stroke Centers
Blue Ridge	102	16 (15.7)	0 (0.0)	2 (2.0)	78 (76.5)	6 (5.9)
Central Shenandoah	45	9 (20.0)	0 (0.0)	30 (66.7)	2 (4.4)	4 (8.9)
Lord Fairfax	15	3 (20.0)	0 (0.0)	12 (80.0)	0 (0.0)	0 (0.0)
Northern Virginia	161	21 (13.0)	6 (3.7)	42 (26.1)	26 (16.1)	66 (41.0)
Old Dominion	200	20 (10.0)	0 (0.0)	76 (38.0)	1 (0.5)	103 (51.5)
Peninsulas	63	4 (6.3)	0 (0.0)	14 (22.2)	0 (0.0)	45 (71.4)
Rappahannock	70	7 (10.0)	0 (0.0)	46 (65.7)	0 (0.0)	17 (24.3)
Southwest Virginia	41	33 (80.5)	0 (0.0)	5 (12.2)	3 (7.3)	0 (0.0)
Thomas Jefferson	34	2 (5.9)	0 (0.0)	2 (5.9)	0 (0.0)	30 (88.2)
Tidewater	232	11 (4.7)	6 (2.6)	144 (62.1)	8 (3.4)	63 (27.3)
Western Virginia	137	39 (28.5)	3 (2.2)	39 (28.5)	50 (36.5)	6 (4.4)
Out of State	6	5 (83.3)	0 (0.0)	0 (0.0)	1 (16.7)	0 (0.0)
Total	1,106	170 (15.4)	15 (1.4)	412 (37.3)	169 (15.3)	340 (30.7)

Regional Stroke Survey Results

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QUESTIONS?