7.i. GETAC Stroke Committee

Chair: Robin Novakavic-White, MD

Vice-Chair: Sean Savitz, MD

GETAC Stroke Committee

New Members

- Jennifer Burwell
- Dr. Amanda Jagolino-Cole
- Michelle Steiner
- Amanda Webb
- Chantel Molina
- Melanie Aluotto

Thank You for Service

- Dr. Johanna Morton
- Ashley Garza

Returning Members

- Candace McAlpine
- Tory Cairns

Stroke Committee

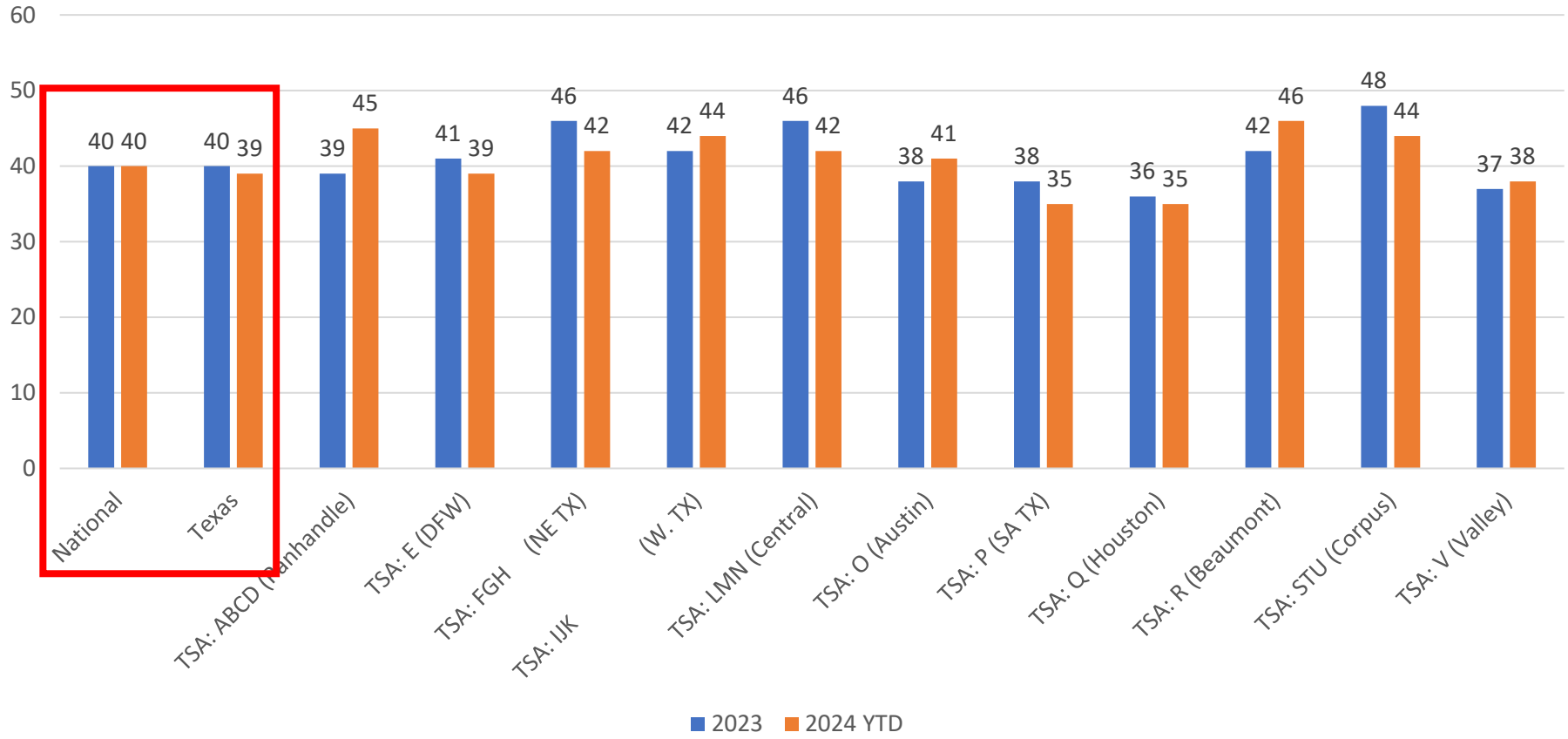
Priority Not Implemented
Priority Activities Recorded
Priorities Completed and being Monitored

Committee Priorities	Current Activities	Status
Report and share quarterly Texas Stroke Quality Performance Report	• **Review and disseminate Texas Stroke Quality report.** • **Share with TCCVDS.** • **Use the quality report to identify barriers to stroke care and opportunities for improvement.** • **Encourage stroke facility document in the GWTG prehospital and interfacility layers.**	
RDC report	• Discussion about using RDC for performance report when 60% stroke facilities participating	
Quality and patient safety issue	• Letter presented from providers siting patient safety issue regarding Neuro IR call coverage. • Multiple providers in state of Texas gave first-hand experience supporting statements in the letter. • Stroke Committee voted to approve the concerns are a quality and patient safety issue that need to be reviewed. • Seek approval from GETAC Council	

Texas Stroke Quality Report: Q4 2024

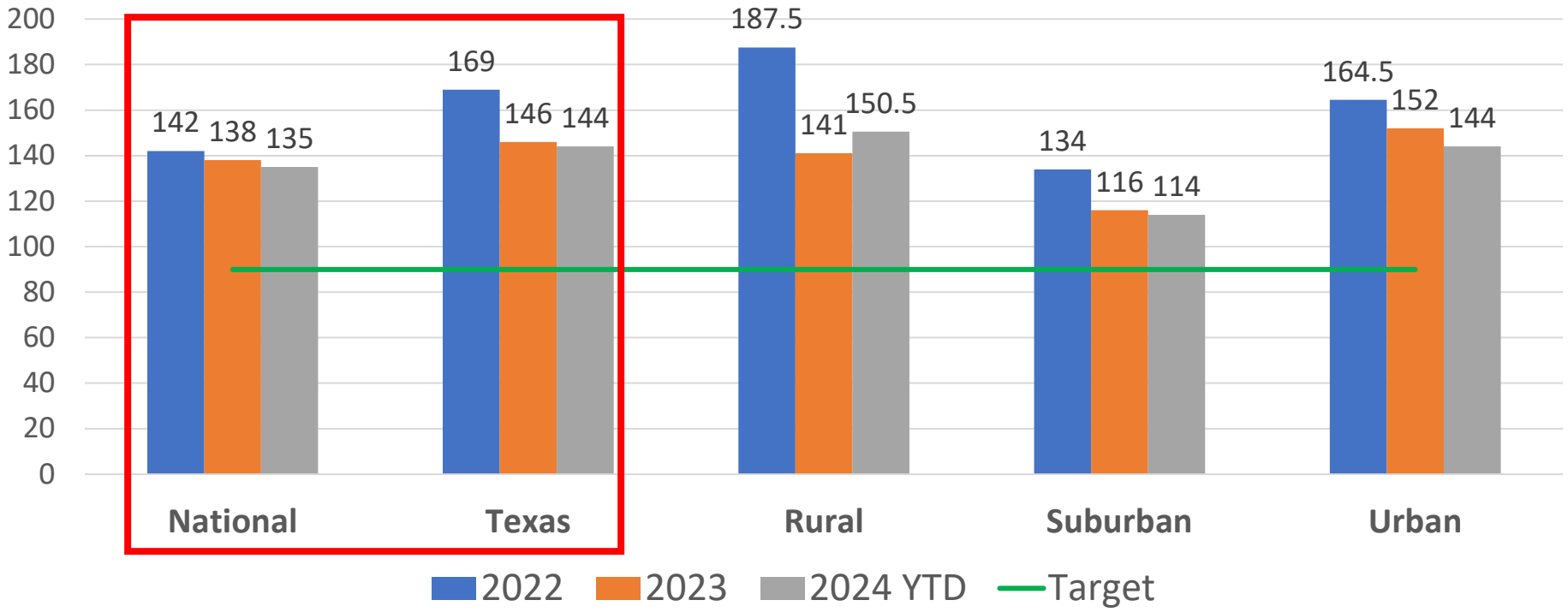
Data Sourced from Get With The Guidelines® - Stroke
October 2024

Median DTN by RAC (minutes)



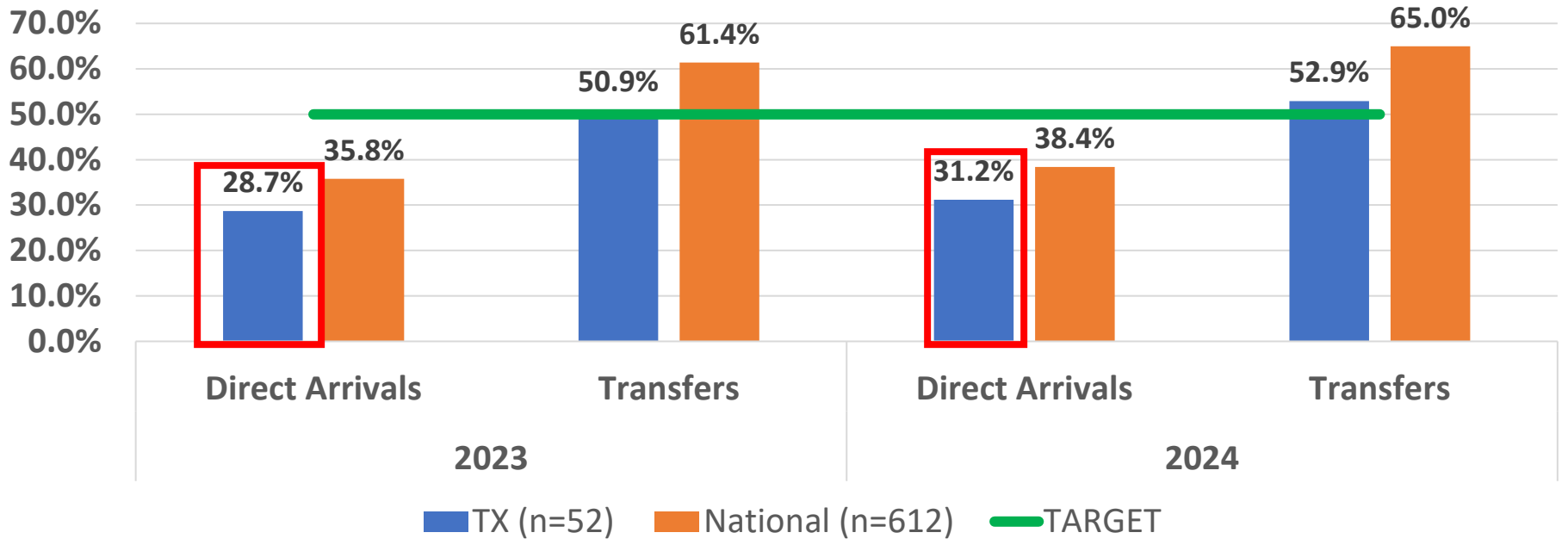
Disclaimer: Get with The Guideline reports are generated from a live registry. All data is subject to change. Report generated on 10/8/24.

Median DIDO for Acute Therapy Eligible Patients



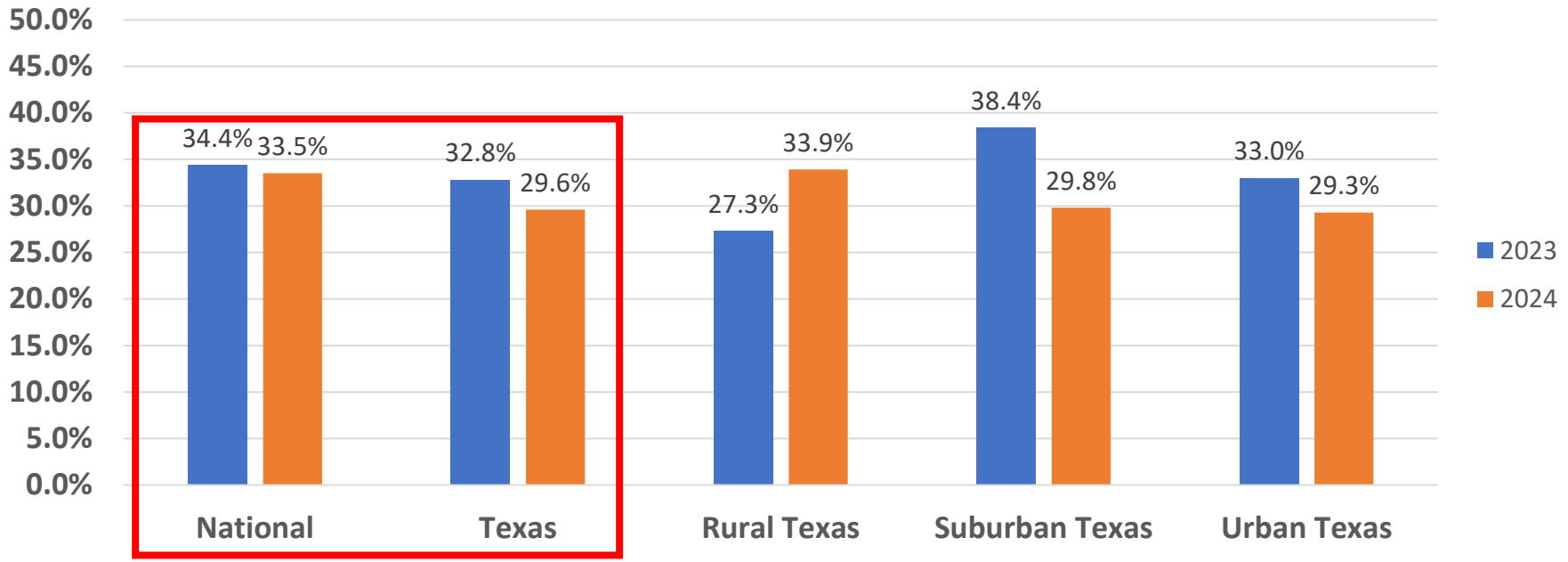
Disclaimer: Get with The Guideline reports are generated from a live registry. All data is subject to change. Report generated on 10/8/24.

DTD <60 min. for Transfers; DTD <90 min. for Direct Arrivals (LKW w/i 24 hours)



Disclaimer: Get with The Guideline reports are generated from a live registry. All data is subject to change. Report generated on 10/8/24.

Percentage of confirmed stroke patients transported to your hospital by EMS and for whom a validated regional or national stroke screen tool was used with documentation of the outcome.



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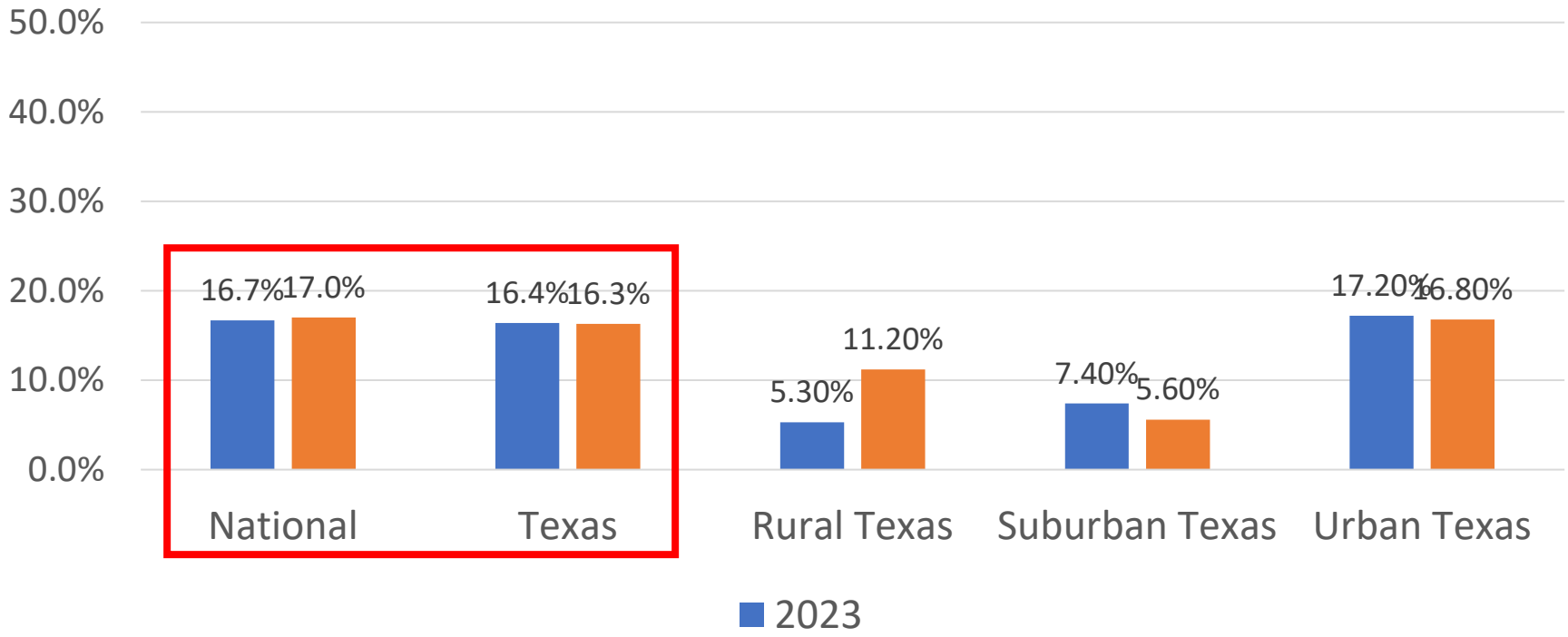
EMS Stroke Severity Screening by Geographic Classification

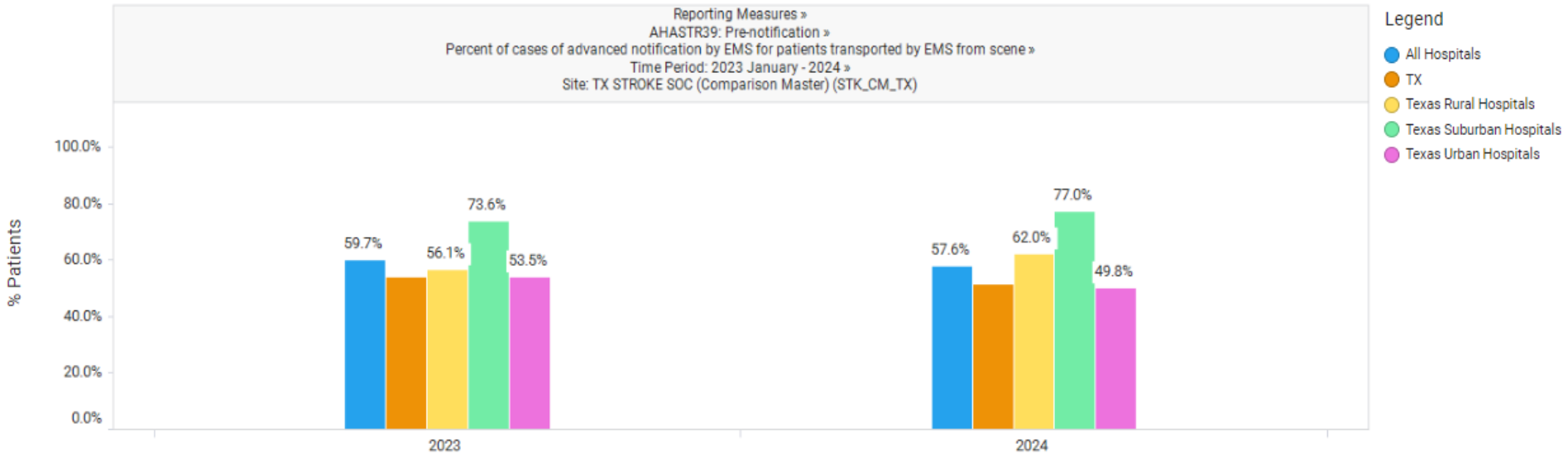


Disclaimer: Get with The Guideline reports are generated from a live registry. All data is subject to change. Report generated on 10/8/24.

AHASTR39: Pre-notification

Percent of cases of advanced notification by EMS for patients transported by EMS from scene

Measure Summary



GWTG non-required data element

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Stroke Committee

Priority Not Implemented
Priority Activities Recorded
Priorities Completed and being Monitored

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Proposed NCTTRAC Recommendation

Comprehensive and Thrombectomy Capable Stroke Centers that perform mechanical thrombectomy should have adequate coverage to meet the emergent needs of multiple strokes. Each facility should have a written call schedule readily available within the hospital system, identifying the on-call and backup on-call interventional provider privileged to perform mechanical thrombectomy (neurointerventionalist) 24 hours a day, 7 days a week, 365 days a year. The neurointerventionalist taking calls should be available by phone within 20 minutes and available on-site within 30 minutes from notification. When concurrent facilities are covered by either the primary or backup on-call provider, the following should be in place:

* If one neurointerventionalist is primary on-call concurrently at 2 facilities there should be one dedicated backup on-call provider for each facility (e.g., two hospitals with shared coverage, one primary and 3 tier backup on-call coverage).
* The dedicated primary neurointerventionlist on-call at one facility may serve as backup call for no more than 1 hospital at any given time (e.g. primary call at one facility and backup at one additional facility).
* The facilities with cross coverage should be in close proximity, allowing the neurointerventionlist either serving as primary or backup on-call to be available on site within 30 minutes.

Comprehensive and Thrombectomy Capable Stroke Centers that utilize a system of care to deliver stroke care, treatment, and services may utilize the same interventionists provided the following requirements are met:

* Written call schedules are readily available within the hospital system to demonstrate how stroke care, treatment, and services are provided at all hospitals in the system 24 hours a day, 7 days a week, 365 days a year.
* If one physician is covering more than one facility or another service in the organization, there is a written plan for backup coverage.
* Protocols and processes are developed and implemented to detail the system and organizations' plans to meet the emergent needs of multiple complex stroke patients.
* Protocols and processes are developed in response to times organizations would not be able to provide mechanical thrombectomy services and subsequently transfer patients or notify Advisory -Capability with comment.

Comprehensive and Thrombectomy Capable Stroke Centers that perform mechanical thrombectomy and utilize an independent contracted provider or group for neurointerventional coverage to deliver stroke care, treatment, and services should have the following requirements met by the contracted provider or group:

*Written call schedules are readily available outlining all of the hospitals that the primary and backup on-call providers are covering for the shift.
*If one contracted physician is covering more than one facility, there is a written plan to meet the emergent needs of multiple stroke patients for each of the facilities.
*Protocols and processes are developed in response to times the primary and backup on-call providers would not be able to provide mechanical thrombectomy services and subsequently transfer patients or notify of Advisory-Capability with comment. *

Stroke Committee

Priority Not Implemented
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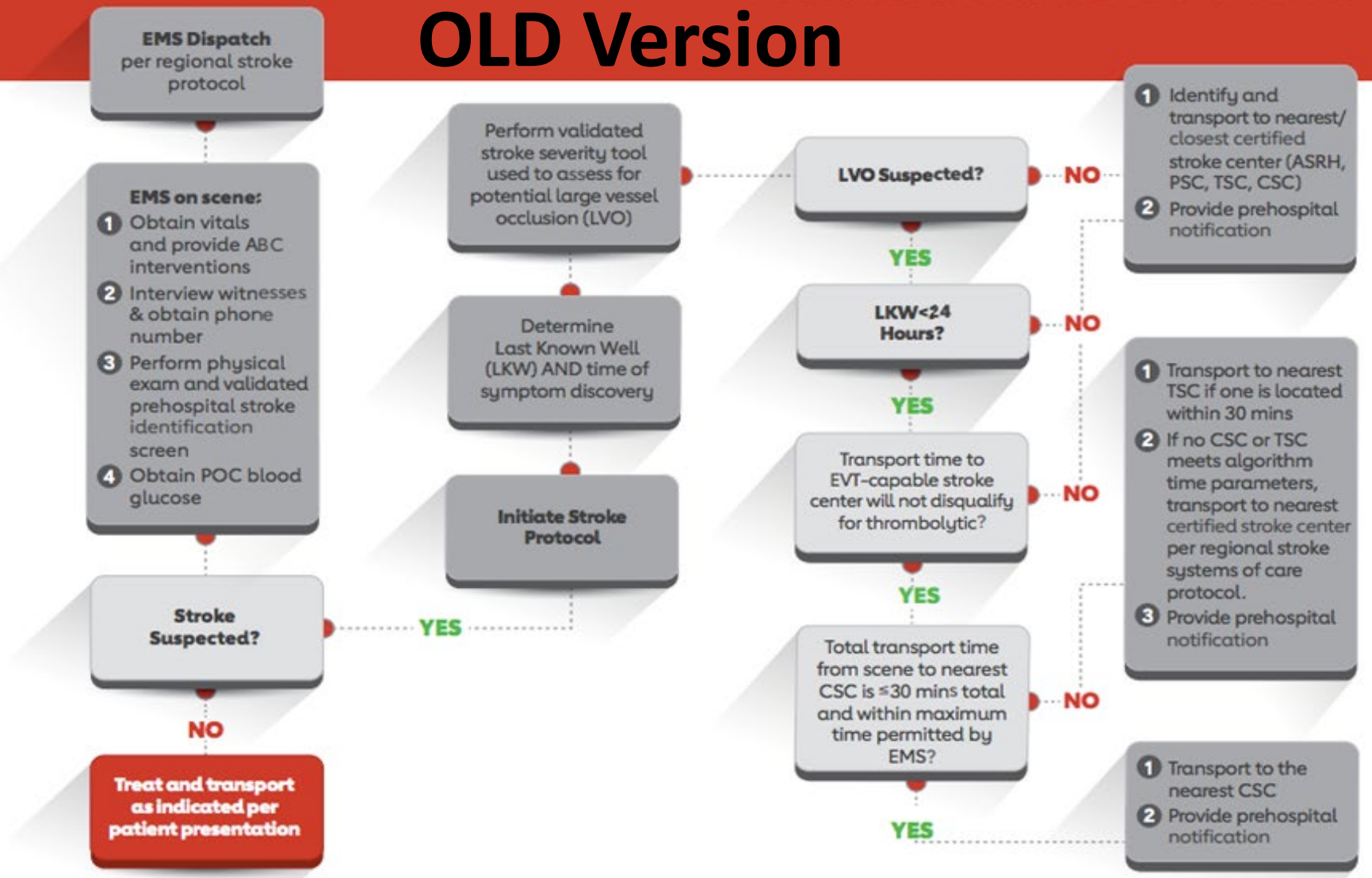
Committee Priorities	Current Activities	Status
Prehospital Stroke algorithm – Recommendation	• **Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Stroke, EMS, Air Medical and EMS Medical Director Committees 11/2024.** • **Present to the GETAC Council for approval.** • **Next steps if approved: work on final versions, March Session present to RACs and EMS Education Committee.** • **Is there value to have resource document going into more detail?**	
Stroke facility infrastructure and requirements	• The Stroke System of Care Work Group is outlining best practices and recommendations to present to the Stroke Committee. • On hold while moving other initiatives forward this past session.	
Pediatric Task Force	• Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Pediatric Committee. The Stroke Committee asked for clarification on naming for pediatric facility regionally accepted to care for pediatric stroke. Other committees deferred until have approval. • Elizabeth, Jorie, legal representative and myself meet to discuss. • Next steps, minimum capability recommendations for pediatric hospital to be recognized as capable of caring for pediatric stroke.	

7.i.A. Action Item: ASA Mission Lifeline Prehospital Stroke Algorithm

American Heart Association.
Mission:Lifeline®
Stroke

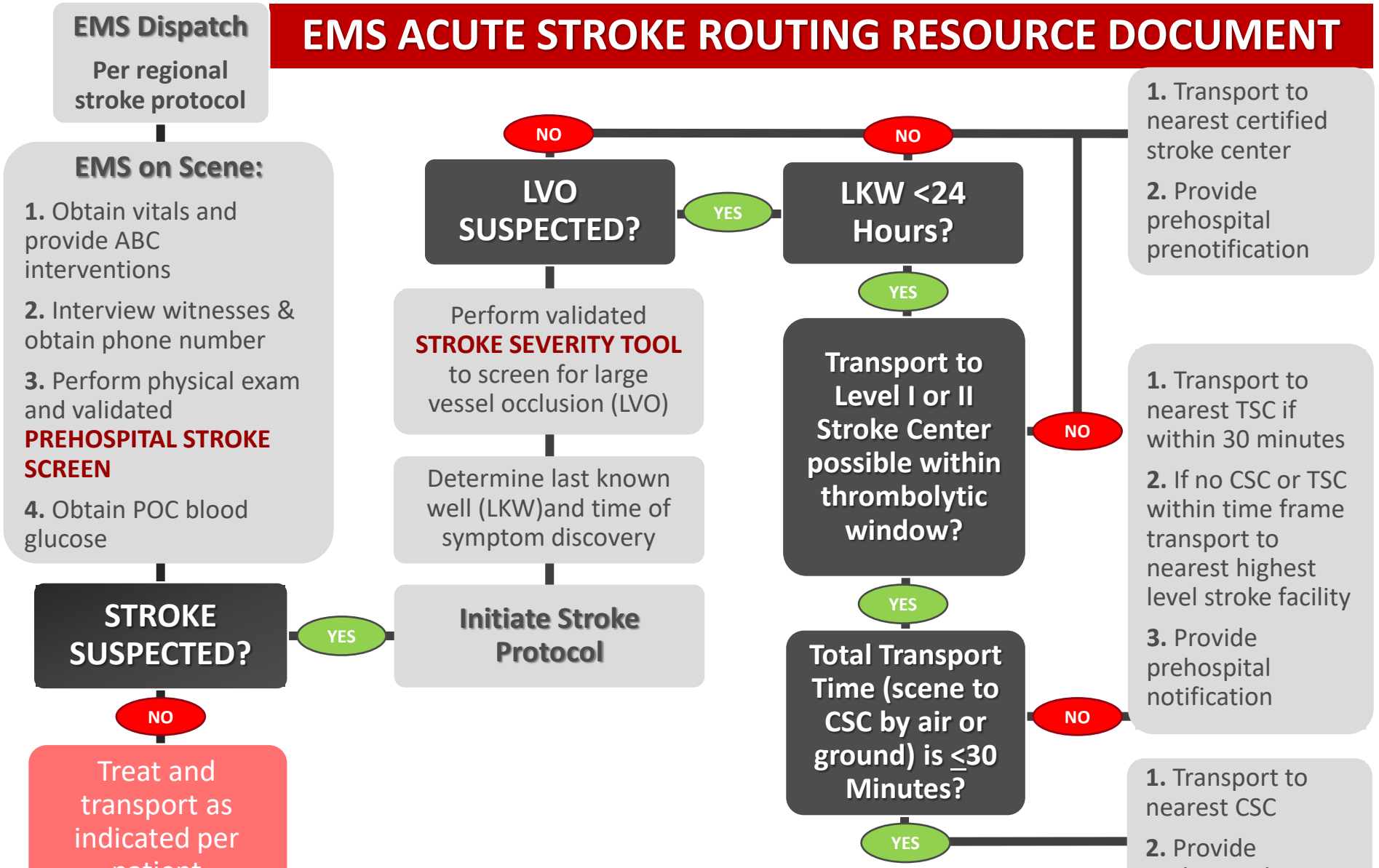
EMERGENCY MEDICAL SERVICES ACUTE STROKE ROUTING

OLD Version



Old Version

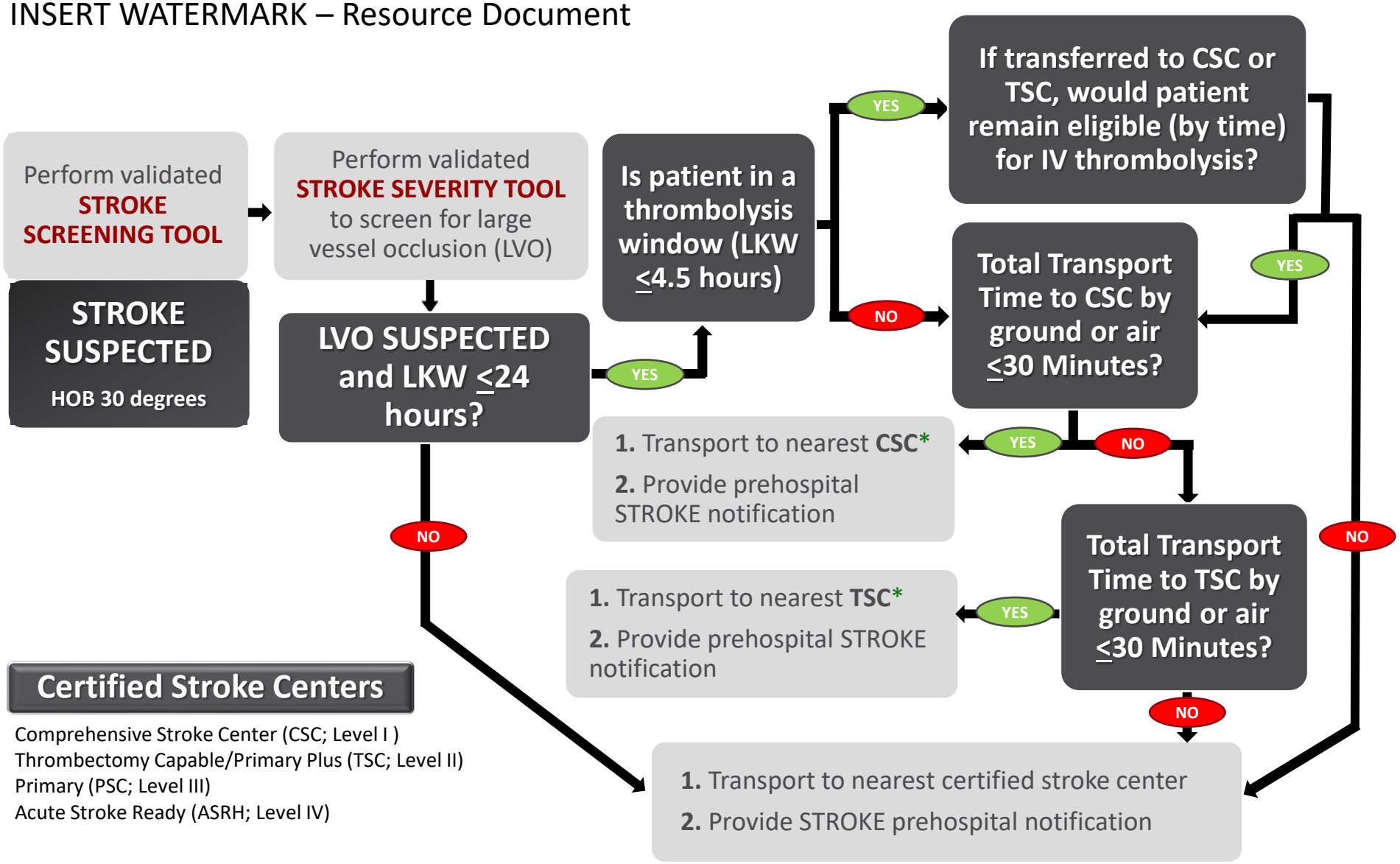
EMS ACUTE STROKE ROUTING RESOURCE DOCUMENT



Disclaimer: Regional stroke protocols are developed and implemented based on local guidelines, medical directors' recommendations, and Regional Advisory Councils (RACs). Variations in protocols may exist between different regions. For the most accurate and applicable guidelines, please consult the specific protocols established by your local health authorities and medical professionals.

EMS ACUTE STROKE ROUTING RESOURCE DOCUMENT - URBAN

INSERT WATERMARK – Resource Document



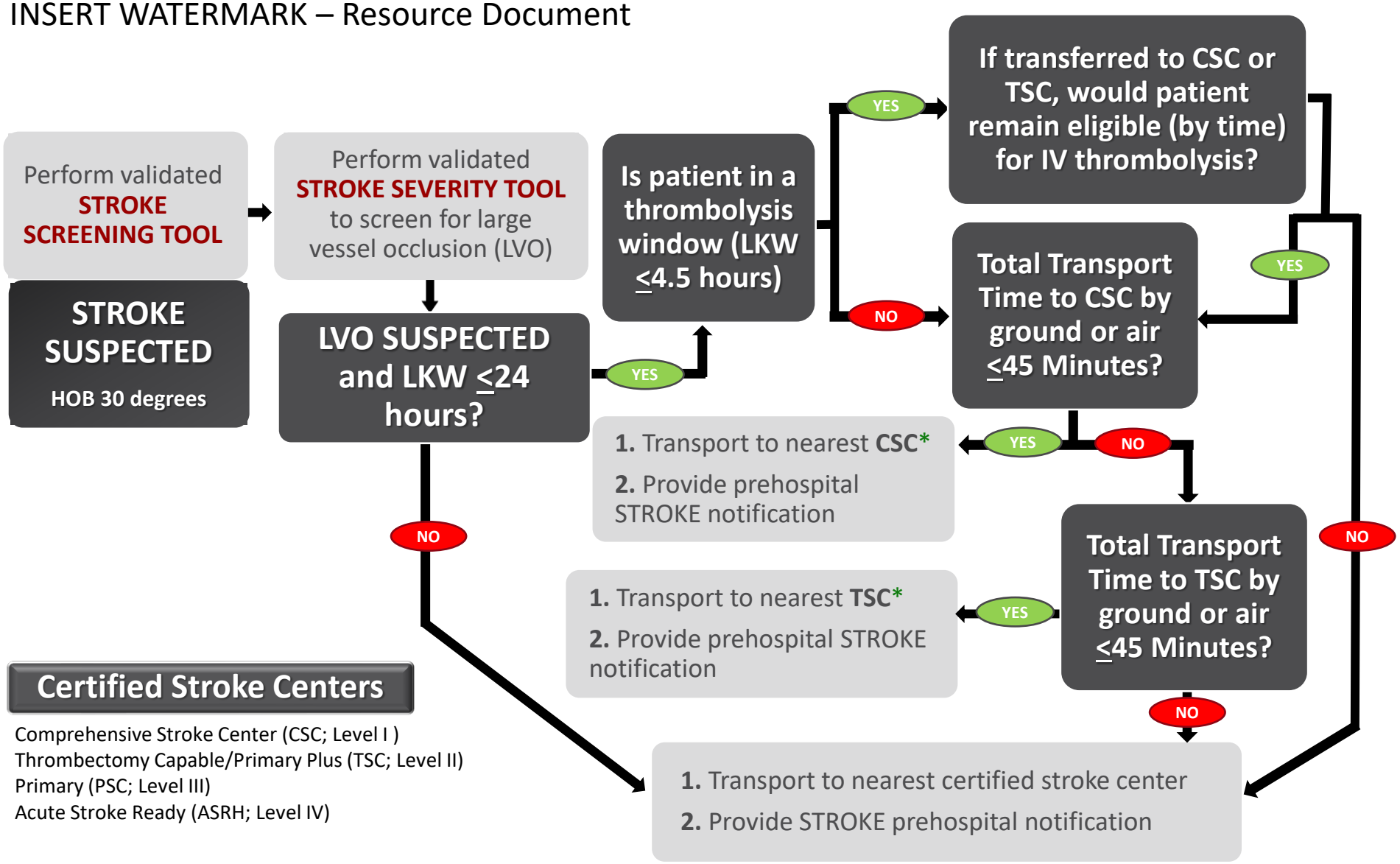
Certified Stroke Centers

Comprehensive Stroke Center (CSC; Level I)
Thrombectomy Capable/Primary Plus (TSC; Level II)
Primary (PSC; Level III)
Acute Stroke Ready (ASRH; Level IV)

LKW – last known well; LVO – large vessel occlusion; * If LVO suspected, consider air transport from scene response to CSC/TSC

EMS ACUTE STROKE ROUTING RESOURCE DOCUMENT - SUBURBAN

INSERT WATERMARK – Resource Document



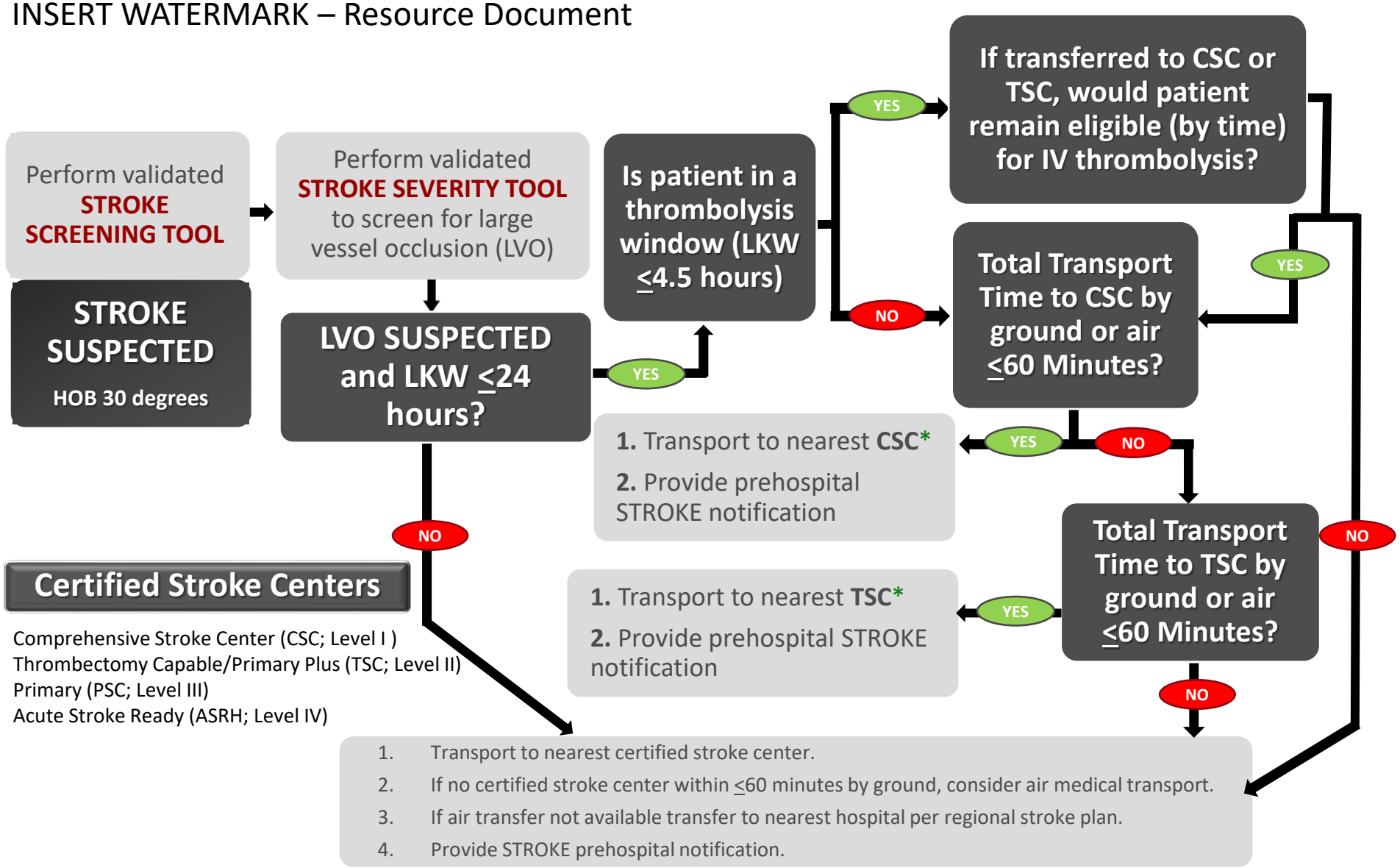
Certified Stroke Centers

Comprehensive Stroke Center (CSC; Level I)
Thrombectomy Capable/Primary Plus (TSC; Level II)
Primary (PSC; Level III)
Acute Stroke Ready (ASRH; Level IV)

LKW – last known well; LVO – large vessel occlusion; * If LVO suspected, consider air transport from scene response to CSC/TSC

EMS ACUTE STROKE ROUTING RESOURCE DOCUMENT - RURAL

INSERT WATERMARK – Resource Document



LKW – last known well; LVO – large vessel occlusion; * If LVO suspected, consider air transport from scene response

Healthcare Resources, Geography and Population Density

Urban

- RUCA code1
- Population densities (≥ 50,000 residents)
- And abundant healthcare resources, with access to one or more TSCs/CSCs within 30 minutes transport time by EMS ground

Suburban

- RUCA codes 2-3
- Large residential community adjacent to urban core
- Population density closer to the urban threshold
- May have access to both community hospitals and suburban or urban advanced stroke centers
- TSC, CSC with a 30-60 minutes transport time by EMS air or ground

Rural

- RUCA codes 4-10
- Population densities (<50,000 residents)
- Limited local general healthcare resources, few nearby ASRH or PSC
- Often no TSC/CSC within 60 minutes transport time by ground EMS, but may be one within 60 minutes by air

Stroke Committee

Priority Not Implemented
Priority Activities Recorded
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Committee Priorities	Current Activities	Status
Prehospital Stroke algorithm – Recommendation	• Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Stroke, EMS, Air Medical and EMS Medical Director Committees 11/2024. • Present to the GETAC Council for approval. • Next steps if approved: work on final versions, March Session present to RACs and EMS Education Committee. • Is there value to have resource document going into more detail?	
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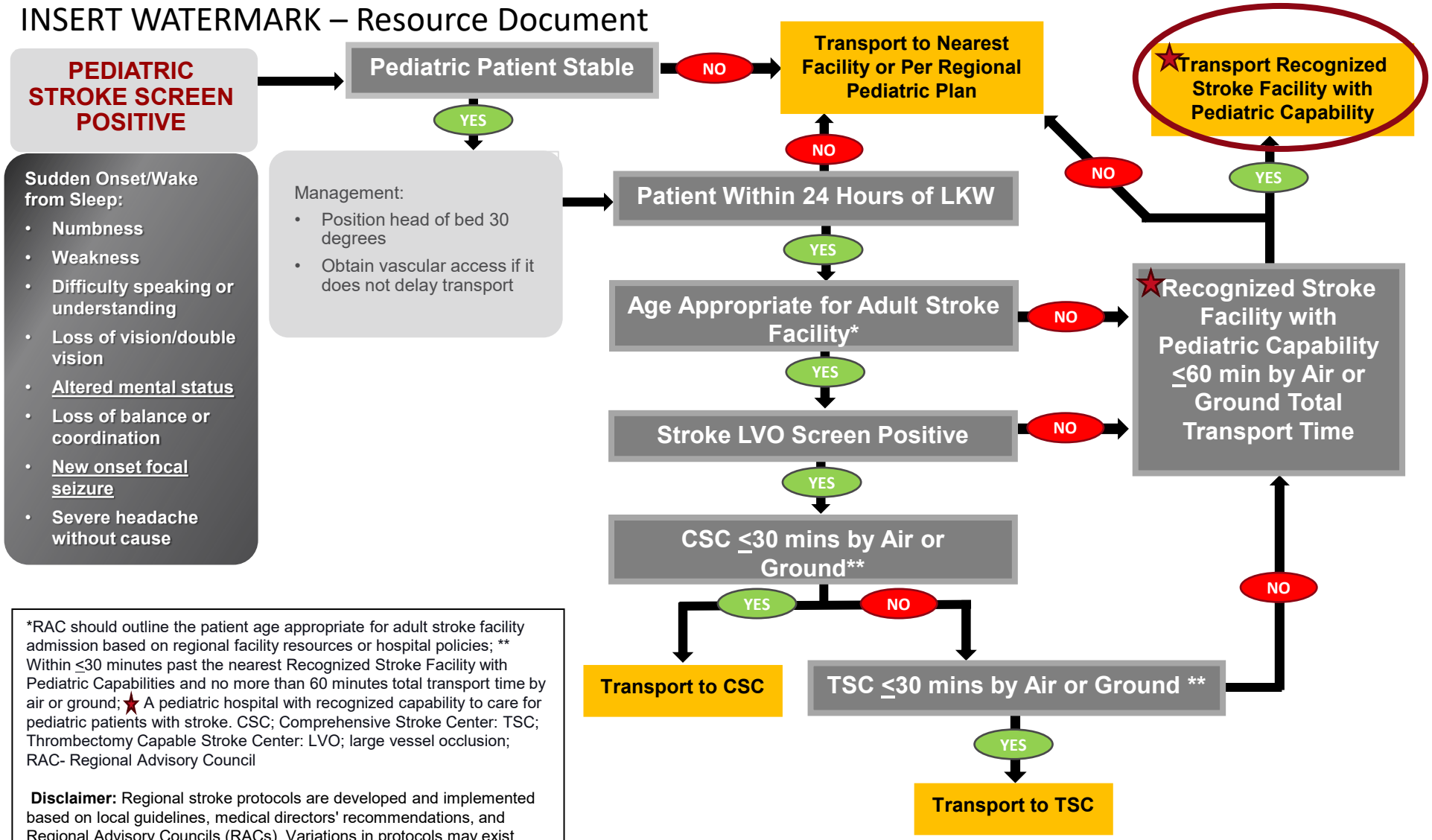
7.i.B. Action Item: Pediatric Stroke Task Force Triage Recommendation

EMS ACUTE PEDIATRIC STROKE RESOURCE DOCUMENT

INSERT WATERMARK – Resource Document



*RAC should outline the patient age appropriate for adult stroke facility admission based on regional facility resources or hospital policies; ** Within ≤30 minutes past the nearest Recognized Stroke Facility with Pediatric Capabilities and no more than 60 minutes total transport time by air or ground; ★ A pediatric hospital with recognized capability to care for pediatric patients with stroke. CSC; Comprehensive Stroke Center: TSC; Thrombectomy Capable Stroke Center: LVO; large vessel occlusion; RAC- Regional Advisory Council

Disclaimer: Regional stroke protocols are developed and implemented based on local guidelines, medical directors' recommendations, and Regional Advisory Councils (RACs). Variations in protocols may exist between different regions. For the most accurate and applicable guidelines, please consult the specific protocols established by your local health authorities and medical professionals. LKW – last known well; LVO – large vessel occlusion

These pages are unchanged from the last meeting.

EMS Pediatric Stroke Triage Recommendations

Pediatric Stroke is a rare disease that is, nevertheless, included among the top ten causes of **death** in pediatrics.[1] However, rapid recognition and appropriate treatment of pediatric stroke can profoundly improve outcomes for these children, sparing them from decades of disability.[2,3] Thrombectomy has been shown to improve outcomes in pediatric large artery occlusion stroke.[4] This guidance document is designed to help EMS providers recognize and triage pediatric stroke patients quickly to facilitate improved outcomes throughout the state.

Goal:
To enhance EMS identification of strokes in the pediatric population (infants and children less than 18 years of age), as well as to increase rapid triage and transport to the nearest appropriate facility.

Purpose:
In consultation with EMS, ER, stroke, pediatric neurology, and pediatric leaders from around the state and current American Heart Association recommendations, we have developed the below EMS guidelines for pediatric patients with a known or suspected stroke.[5,6]

General Information on Pediatric Stroke

Pediatric stroke can present with focal neurologic signs, as well as non-specific signs like seizure or altered mental status.[7–11]

Sudden onset of any of the following suggests the possibility of acute stroke:

- Numbness or weakness of face, arm and/or leg (especially on one side of the body)
- Confusion
- Trouble speaking or understanding language
- Trouble seeing in one or both eyes or double vision
- Altered Mental Status
- Trouble walking
- Dizziness
- Loss of balance or coordination
- Severe headache with no known cause (suggests hemorrhagic stroke), especially with altered mental status

❖ For patients with any of the above neurological signs, especially with the listed conditions below, consider triaging as an acute stroke.

Patients with any of the following are at higher risk for acute stroke:

- Heart disease
- History of blood vessel problems in the brain
- History of stroke
- Sickle cell disease
- Cancer
- History of blood clots

Common pediatric stroke mimics:

- Alcoholic intoxication
- Cerebral infections
- Drug overdose
- Hypoglycemia
- Hyperglycemia
- Genetic/metabolic disorders
- Atypical migraines
- Neuropathies (e.g. Bell's palsy)
- Seizure
- Post-ictal state
- Tumors

Prehospital Triage of Stroke Patients

Basic Level – in suspected stroke cases, as with all other pediatric patients, assess and treat ABCDEs per universal pediatric recommendations:

- **A (Airway):** Airway support and ventilation assistance are recommended for patients with acute stroke who have decreased consciousness or who have compromised airway. Ensure airway patency with suctioning and OPA or NPA, as needed.
- **B (Breathing):** Supplemental oxygen should be provided to maintain oxygen saturation > 94% (continuous monitoring).
- **NOTE:** some patients with congenital heart disease have a different goal saturation level (80-90% in some cases). Confirm normal level with parents/caretakers if unsure.
- **C (Circulation):** Evaluate and treat signs/symptoms of shock according to the Shock Clinical Practice Guidelines
- **D (Disability)**: Assess and document GCS, pupillary size and reactivity.
- **E (Exposure/Environmental):** Assess for evidence of traumatic injury, especially head injury.

Stabilization and initial management:

- If there is evidence of shock, treat according to the Shock clinical practice guidelines.
- If there is hypoglycemia (POC glucose < 60 mg/dL), treat according to diabetic emergencies clinical practice guidelines.
- If there are seizures, treat according to the seizure clinical practice guidelines.
- Place the patient in a supine position, head of the bed elevated 30 degrees.
- Cardiac monitoring during transport is recommended.

Cardiovascular examination:

- Record blood pressure, rate, rhythm, respiratory rate and oxygen saturation.
- Obtain an EKG if it will not delay transport.

Neurological assessment for pediatric stroke:

- Weakness of face, arm and/or leg (especially on one side of the body)
- Numbness on one side of the face or body
- Confusion
- Trouble speaking or understanding language
- Trouble seeing in one or both eyes or double vision
- Altered Mental Status
- Trouble walking
- Dizziness
- Loss of balance or coordination
- Severe headache with no known cause (suggests hemorrhagic stroke), especially with altered mental status
- Seizure with post-ictal focal deficit (like weakness) that does not resolve quickly (~15 minutes)

History:

Interview patient, family members and other witnesses to determine symptoms, time of symptom discovery and last known well (LKW), or last time patient was without symptoms. Ask about seizure at onset, head trauma, history of recent surgeries, history of bleeding problems, and signs of possible brain hemorrhage (severe headache of sudden onset, nausea/vomiting with headache or loss of consciousness). Obtain mobile number of next of kin and witnesses.

- ❖ **NOTE:** For "wake up strokes" the last known well time is the last time that they were witnessed to be at their baseline, which may be the night before. The time they are found is not the last known well time.

Additional History:

- Obtain past medical history and history of past and recent surgeries.
- Allergies (e.g., iodinated contrast)
- Pre-existing substantial disability (e.g., unable to walk independently)
- Device and implant history (e.g., left ventricular assist device, pacemaker, valve replacement, VP shunt)

Medications:

- Obtain a list of all medications including antiplatelet agents (e.g. aspirin, clopidogrel [Plavix]) and blood thinners (direct thrombin inhibitors, factor Xa inhibitors, low molecular weight heparin [enoxaparin/ Lovenox], unfractionated heparin, warfarin [Coumadin], rivaroxaban [Xarelto], dabigatran [Pradaxa], apixaban [Eliquis], edoxaban [Savaysa]).
- If possible, record when the last dose was taken.

Management:

EMS personnel should address ABCDEs per universal pediatric guidelines. Additional initial management steps include:

1. Prevent aspiration, HOB > 30. Ensure airway patency with suctioning and OPA or NPA as needed.
2. Provide supplemental oxygen if needed to keep oxygen saturation > 94%.
   a. (Adjust if the patient has known congenital heart disease with a different goal oxygen saturation)
3. Treat hypotension per regional pediatric protocols.
4. Maintain blood pressure below 20% above 95th%ile for age.[12] Call online medical control if systolic blood pressure consistently above this percentile. The below table is an example of an upper limit of systolic blood pressure by age.

Age	Goal Systolic Blood Pressure
1-4 years	<130mmHg
5-10 years	<145mmHg
11-17 years	<160mmHg

5. Hypoglycemia (blood glucose < 70 mg/dL)[13] should be treated in patients suspected of acute ischemic stroke.* Evidence indicates that persistent in-hospital hyperglycemia during the first 24 hours after stroke is associated with worse outcomes and increased risk of hemorrhagic conversion in adults than normoglycemia. You should treat hyperglycemia with a blood glucose range of 140-180 being preferred.
6. To facilitate expedited stroke workup in the ED, place two peripheral IVs so long as it does not delay transport time.

System Triage:

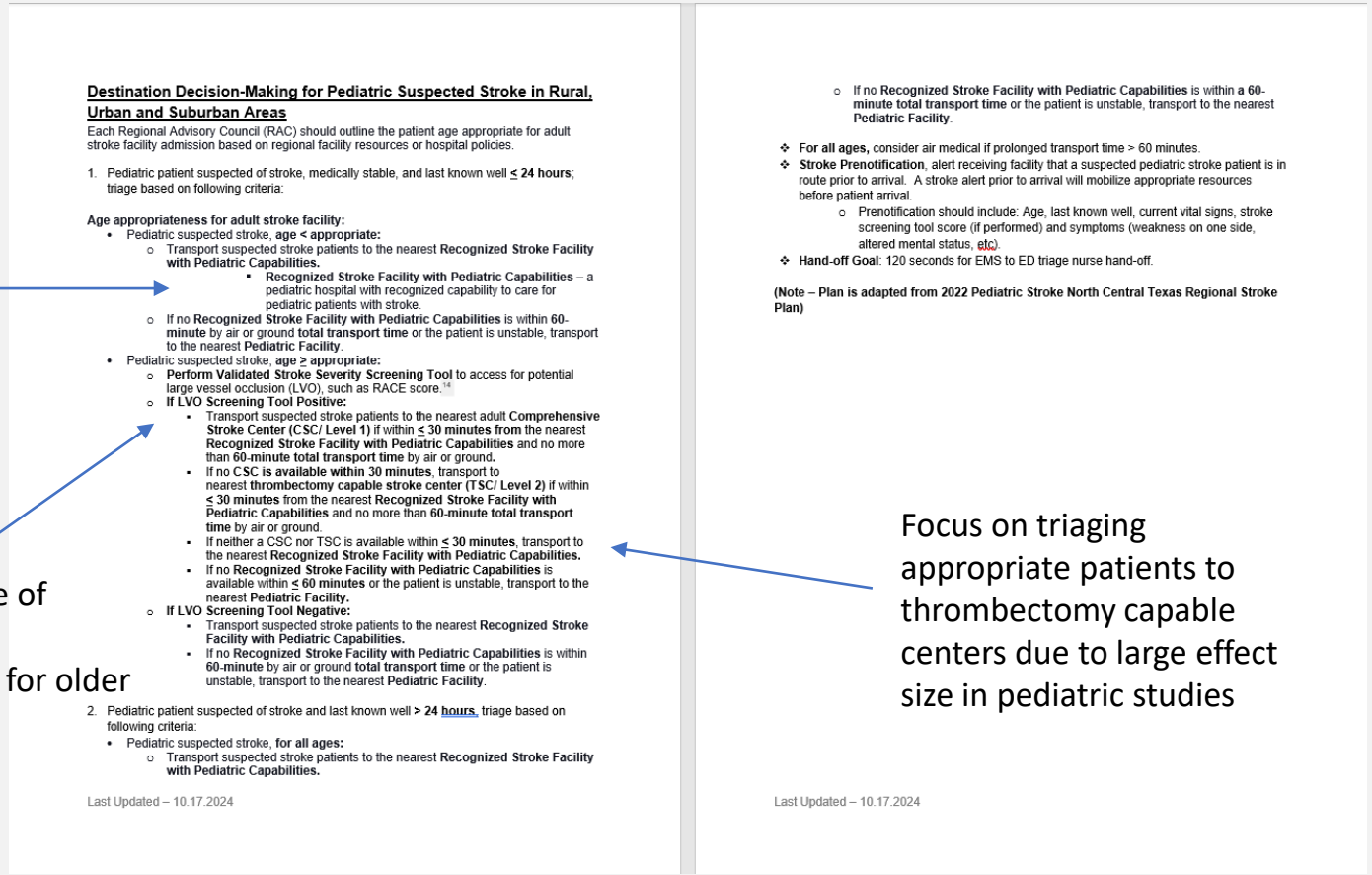
Goal on-scene time is 10-15 minutes or less. Encourage the family to go directly to the ED if not transported with the patient.

Simplified instructions and blood pressure goals

Expert consensus for blood glucose goals
70-180 in children

Consensus definition

Recommend use of screening tool (just like adults) for older children



Destination Decision-Making for Pediatric Suspected Stroke in Rural, Urban and Suburban Areas

Each Regional Advisory Council (RAC) should outline the patient age appropriate for adult stroke facility admission based on regional facility resources or hospital policies.

1. Pediatric patient suspected of stroke, medically stable, and last known well **≤ 24 hours**; triage based on following criteria:

Age appropriateness for adult stroke facility:

- Pediatric suspected stroke, **age < appropriate:**
  - Transport suspected stroke patients to the nearest **Recognized Stroke Facility with Pediatric Capabilities.**
    - **Recognized Stroke Facility with Pediatric Capabilities** – a pediatric hospital with recognized capability to care for pediatric patients with stroke.
  - If no **Recognized Stroke Facility with Pediatric Capabilities** is within **60-minute** by air or ground **total transport time** or the patient is unstable, transport to the nearest **Pediatric Facility**.
- Pediatric suspected stroke, **age ≥ appropriate:**
  - **Perform Validated Stroke Severity Screening Tool** to access for potential large vessel occlusion (LVO), such as RACE score.[14]
  - **If LVO Screening Tool Positive:**
    - Transport suspected stroke patients to the nearest adult **Comprehensive Stroke Center (CSC/ Level 1)** if within **≤ 30 minutes from** the nearest **Recognized Stroke Facility with Pediatric Capabilities** and no more than **60-minute total transport time** by air or ground**.**
    - If no **CSC is available within 30 minutes**, transport to nearest **thrombectomy capable stroke center (TSC/ Level 2)** if within **≤ 30 minutes** from the nearest **Recognized Stroke Facility with Pediatric Capabilities** and no more than **60-minute total transport time** by air or ground.
    - If neither a CSC nor TSC is available within **≤ 30 minutes**, transport to the nearest **Recognized Stroke Facility with Pediatric Capabilities.**
    - If no **Recognized Stroke Facility with Pediatric Capabilities** is available within **≤ 60 minutes** or the patient is unstable, transport to the nearest **Pediatric Facility.**
  - **If LVO Screening Tool Negative:**
    - Transport suspected stroke patients to the nearest **Recognized Stroke Facility with Pediatric Capabilities.**
    - If no **Recognized Stroke Facility with Pediatric Capabilities** is within **60-minute** by air or ground **total transport time** or the patient is unstable, transport to the nearest **Pediatric Facility**.

2. Pediatric patient suspected of stroke and last known well **> 24 hours**, triage based on following criteria:
   - Pediatric suspected stroke, **for all ages:**
     - Transport suspected stroke patients to the nearest **Recognized Stroke Facility with Pediatric Capabilities.**

Last Updated – 10.17.2024

- If no **Recognized Stroke Facility with Pediatric Capabilities** is within **a 60-minute total transport time** or the patient is unstable, transport to the nearest **Pediatric Facility**.

- **For all ages,** consider air medical if prolonged transport time > 60 minutes.
- **Stroke Prenotification**, alert receiving facility that a suspected pediatric stroke patient is in route prior to arrival. A stroke alert prior to arrival will mobilize appropriate resources before patient arrival.
  - Prenotification should include: Age, last known well, current vital signs, stroke screening tool score (if performed) and symptoms (weakness on one side, altered mental status, etc).
- **Hand-off Goal**: 120 seconds for EMS to ED triage nurse hand-off.

(Note – Plan is adapted from 2022 Pediatric Stroke North Central Texas Regional Stroke Plan)

Last Updated – 10.17.2024

Focus on triaging appropriate patients to thrombectomy capable centers due to large effect size in pediatric studies

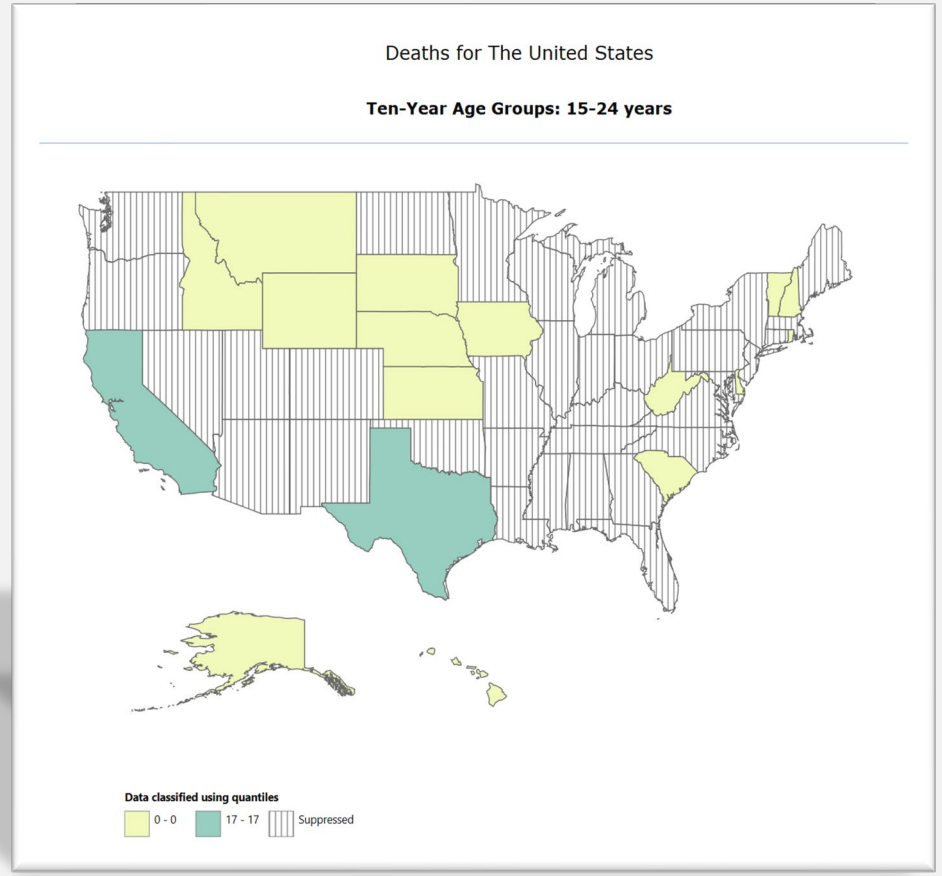
Pediatric Stroke

- Incidence of stroke in children ranges from 2.5-13 per 100,000 per year.
- Top 10 causes of pediatric death.
- Up to 80% of stroke survivors show long-term cognitive and motor deficits that affect daily function.
- Delays to diagnosis will impact a child's chance of accessing acute stroke care.
- Median time from symptom onset to diagnosis is around **20 hours**.

- Kupferman JC, et al. *J Child Neurol*, 2017. 32:408-417.
- Fullerton HJ, et al. *Neurology*. 2003;61:189–194. doi: 10.1212/01.wnl.0000078894.79866.95
- Yock-Corrales A, et al. *BMC Pediatr*. 2011;11:93. doi: 10.1186/1471-2431-11-93
- Bindslev JB, et al. *Eur Stroke J*. 2023;8:483–491. doi: 10.1177/23969873231161381
- Mallick AA, et al. *J Neurol Neurosurg Psychiatry*. 2015;86:917–921. doi: 10.1136/jnnp-2014-309188

Pediatric Stroke

- In 2022, the highest number of pediatric deaths from stroke in Texas were <1 and between 15-24 years of age.



- Centers for Disease Control and Prevention. National center for health statistics: mortality data on CDC WONDER. Available from: https://wonder.cdc.gov/mcd.html (access 11/25/2024)

Stroke Committee

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Priorities Completed and being Monitored

Committee Priorities	Current Activities	Status
Interfacility Stroke Terminology	• **Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Stroke, EMS, Air Medical and EMS Medical Director Committees 11/2024.** • **Present to the GETAC Council for approval.** • **Next steps if approved: March Session present to RACs and EMS Education Committee.**	
DIDO performance recommendations	• **Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Stroke, EMS, Air Medical and EMS Medical Director Committees 11/2024.** • **Present to the GETAC Council for approval.** • **Next steps if approved: March Session present to RACs and EMS Education Committee.** • **Long-term goal, collect the data to outline barriers for interfacility transfers and opportunities to facilitate faster DIDO**	
Establish research opportunity in the state of Texas to help advance stroke care in the state	• Working on Texas study evaluating if providing standardized stroke education improves performance. • Discussed briefly Needs Assessment for EMS Stroke Education Survey.	

7.i.C. Action Item: Interfacility Stroke Terminology Document

INTERFACILITY STROKE TERMINOLOGY

1

Level 1 Stroke = Patient with an ischemic or hemorrhagic stroke in need of an emergent intervention

2

Level 2 Stroke = Patient with an ischemic or hemorrhagic stroke in need of an urgent transfer for higher level of care but without emergent need of an intervention

3

Level 3 Stroke = Patient with an ischemic or hemorrhagic stroke in need of transfer but without emergent or urgent needs

- **Level 1 and 2 Stroke**- time from ***agency notification*** to ***arrival at transferring hospital*** **<30 minutes by air or ground urban/suburban and 45 minutes rural areas**.
- **Level 1 Stroke**- if ground transportation to transferring facility or transport time to receiving facility >30 minutes consider air transport.

7.i.D. Action Item: Door-in/Door-out (DIDO) Performance Recommendations

Breaking Down DIDO

DIDO Metrics for patients with LVO in need of thrombectomy Goal 90 minutes	
Transferring facility **Door to Transfer Request** to receiving facility and ground or air medical transport	**Median 30 minutes or less** **(call as soon as possible)** *Consider early activation if auto-accept with receiving facility is not in place
Receiving Facility **Notification to Response** acceptance or rejection	**Median 15 minutes or less**
Transfer Request to Transport Arrival	**50% at goal: 30 minutes by air or ground urban/suburban and 45 minutes rural**
Transport Arrival to Door Out	**Median 15 minutes or less**

Interfacility Transfer Layer Measures to Follow GWTG

Performance Measure	Goal
AHASTR165 Arrival to transfer request	Median ≤30 minutes
AHASTR166 Arrival to transport request	Median ≤30 minutes
AHASTR171 Transfer requested by referring hospital to transfer accepted by receiving hospital	Median ≤15 minutes
AHASTR172: Transport requested to transport arrived	50% at goal: 30 minutes by air or ground urban/suburban and 45 minutes rural
AHASTR173 Transport arrived to transfer out at referring hospital	Median ≤15 minutes

Stroke Committee

Priority Not Implemented
Priority Activities Recorded
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DIDO performance recommendations	• Worked with Drs. Fagan and Winckler from last session, revisions were presented and approved by the Stroke, EMS, Air Medical and EMS Medical Director Committees 11/2024. • Present to the GETAC Council for approval. • Next steps if approved: March Session present to RACs and EMS Education Committee. • Long-term goal, collect the data to outline barriers for interfacility transfers and opportunities to facilitate faster DIDO	
Establish research opportunity in the state of Texas to help advance stroke care in the state	• **Working on Texas study evaluating if providing standardized stroke education improves performance.** • **Discussed briefly Needs Assessment for EMS Stroke Education Survey.**	

Texas Study

Hypothesis: EMS stroke knowledge would improve if standardized stroke education was provided.

- Define two groups for comparison: Perform an **+intervention with** standardized stroke education and another that uses current practices (**-intervention**).
- Test knowledge with EMS survey (similar to published study) of both groups prior to study intervention and another at 3 months and 6 months.
- Would need to define how groups would be defined and seek funding
- Primary outcome:
  - knowledge demonstrated on pre and post assessment comparing “RACs/groups” that had the intervention to those that did not.
- Secondary outcomes:
  - Comparing **+intervention** to **–intervention** groups with GWTG performance measures:
    - Use and documentation stroke screening tool
    - Stroke severity screening tool
    - Prehospital notification
    - Possibly include DIDO layer (not fully active now but in near future possibly)
    - EMS notification of transfer to transferring hospital arrival.

Texas Study

Within a system of stroke care, access to prehospital stroke care requires early recognition of stroke and stroke severity, with integration of the clinical finding into a complex triage paradigm factoring in regional geography, last known well (LKW), stroke facility capability and availability. Emergency medical responders are often the first medical professional with direct patient contact. Their initial assessment, treatment and decisions on diversion and routing will have significant consequences on a patient's subsequent care and impacts outcome. The current state of emergency medical services (EMS) stroke knowledge varies widely depending on the region, resources and training protocols in place. In one US survey, EMS providers reported inadequate stroke severity training and demonstrated gaps in knowledge stroke types, stroke severity sales, and stroke center levels (asif et al). These findings highlight the need for systematic efforts to enhance and standardize the educational content and delivery of stroke education. We seek to investigate the impact of standardized stroke education on both stroke knowledge and performance within EMS in suburban, urban and rural areas. The **Texas EMS Standardized Stroke Education Study** would involve three aims: 1. A feasibility study regionally within the state of Texas 2. A national expansion of the trial focusing on rural areas with paucity of resources and 3. …

Trial Design:

1. **Study Type: Prospective, Randomized Cluster, Open-label, Blinded-Analysis Design**

- This design helps to establish causality by comparing outcomes between an intervention group (receiving standardized stroke education) and a control group (receiving usual training or no intervention) within defined regions in the state of Texas.

2. Participants:

- EMS providers: EMTs, AEMT, paramedics, and other relevant personnel.
- Both experienced and novice EMS providers across rural, urban and suburban regions will be enrolled to assess the impact across different skill levels and geographic stroke resources.

3. Intervention:

- Standardized Stroke Education Program:
  - Develop a comprehensive education program covering:
    - Anatomy and pathophysiology of stroke
    - Recognition of stroke symptoms and types
    - Recognition of stroke severity
    - Importance of time-sensitive intervention
    - Proper assessment and initial management of stroke patients
    - Acute stroke system triage for rapid transfer to stroke centers
    - Stroke facility levels and distinctions
    - Importance of prenotification and hand-off best practices
  - Ensure the education program is evidence-based, up-to-date, and aligned with established guidelines.
  - Offer training sessions, educational materials, and interactive exercises.

4. Control:

- Usual Training:
  - EMS providers in the control group receive their regular training, which may vary across different EMS agencies but typically includes basic stroke education.

5. Outcomes:

- **Primary Outcome**:
  - Stroke Knowledge:
    - Pre and post intervention skill and knowledge assessment
    - Retention assessment testing at 3- and 6-months post intervention.
      - Assess EMS providers' understanding of stroke symptoms, appropriate interventions, and time-critical actions.
- **Secondary Outcomes**:
  - Performance in Key Stroke Performance Measures:
    - Evaluate EMS providers' ability to recognize stroke symptoms accurately and initiate appropriate care by reviewing GWTG or NEMSIS performance regionally for:
      - Stroke screening tool utilization and documentation
      - Stroke severity tool utilization and documentation
      - Prenotification of suspect stroke patient arrival
  - Time to Treatment:
    - Track regional performance measures for:
      - Door to Needle (thrombolysis intervention)
      - Door to Provider
  - Patient Outcomes:
    - Track patient outcomes such as mortality, disability, and functional recovery to assess the downstream impact of improved EMS performance.

6. Sample Size Calculation:

- Determine the required sample size based on expected effect size, desired power, and significance level.

7. Randomization:

- Randomly assign EMS providers to either the intervention or control group to minimize selection bias.

8. Blinding:

- Given the nature of the intervention, participants will be unblinded. However, outcome assessors will be blinded to group assignment to reduce bias.

9. Data Collection:

- Use standardized surveys, performance evaluations, and GWTG to collect data on outcomes.

10. Statistical Analysis:

- Compare outcomes between the intervention and control groups using appropriate statistical tests (e.g., t-tests, chi-square tests).
- Adjust for potential confounders such as baseline knowledge or experience level of EMS providers.

11. Ethical Considerations:

- Obtain approval from relevant ethics committees or Institutional Review Boards (IRBs).
- Ensure informed consent from participants.

12. Timeline:

- The duration of the trial, including recruitment, intervention delivery, and follow-up assessments will be 2 years.

13. Budget:

- resources for education program development, training sessions, data collection, analysis, and dissemination of findings.

14. Dissemination of Results:

- Publish findings in peer-reviewed journals and present at relevant Regional Advisory Council and State level to inform EMS practice and policy.

Conclusion:

By rigorously evaluating the effectiveness of such education programs, we can contribute to improving stroke care and outcomes in prehospital settings.

Stroke Committee

Priority Not Implemented
Priority Activities Recorded
Priorities Completed and being Monitored

Committee Priorities	Current Activities	Status
Post Acute Stroke Care Work Group	• Presented to the Stroke Committee, approved 11/2024 • Request approval from GETAC Council	
Stroke Managers Mentorship Program	• Education Work Group discussing platform and feasibility of implementation. • Elizabeth and Jorie to advise.	
STRAC Stroke Program Manager Manual	• Collect and share resources related to stroke program management, stroke coordinator & manager roles and process improvement. • Presented last session, will discuss further about dissemination at the next session.	
Texas Stroke Coordinators Collaborative Survey	• Education Work Group working on revisions to the survey seeking to pair mentor and mentee. • Plan to present next session to committee.	

Stroke Committee

Priority Not Implemented
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Committee Priorities	Current Activities	Status
Texas EMS Stroke Survey	• **Approved** • **Joseph assisting with disseminating survey** • **Extend Deadline**	
Stroke Committee endorsed stroke education and certification courses	• Ongoing effort identifying stroke educational opportunities for providers.	
Stroke Education Resource for stroke facilities	• Working with DSHS for website access to stroke education • Elizabeth to report back to the Stroke Committee next session	
Work with DSHS to outline recommendations for stroke rules for ASRH	• Pending further direction	

GETAC Stroke Screening Survey

GETAC Stroke Screening Survey: https://ais.swmed.edu/redcap/surveys/?s=FDXTM9NHWXNMKJJX

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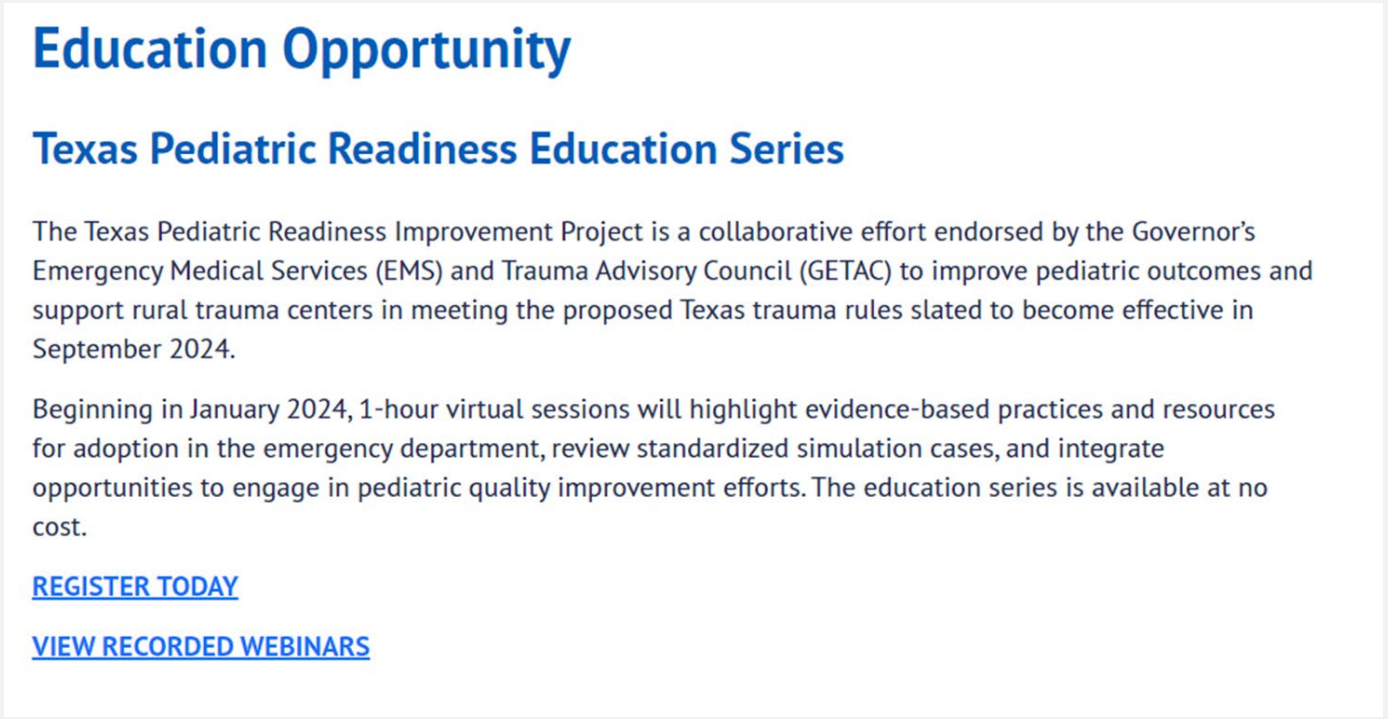
EDUCATION WORK GROUP

Stroke Education Resources for Texas: DSHS is offering the opportunity to post links on the website for stroke education.



Education Opportunity

Texas Pediatric Readiness Education Series

The Texas Pediatric Readiness Improvement Project is a collaborative effort endorsed by the Governor's Emergency Medical Services (EMS) and Trauma Advisory Council (GETAC) to improve pediatric outcomes and support rural trauma centers in meeting the proposed Texas trauma rules slated to become effective in September 2024.

Beginning in January 2024, 1-hour virtual sessions will highlight evidence-based practices and resources for adoption in the emergency department, review standardized simulation cases, and integrate opportunities to engage in pediatric quality improvement efforts. The education series is available at no cost.

REGISTER TODAY

VIEW RECORDED WEBINARS

Stroke Committee

Priority Not Implemented
Priority Activities Recorded
Priorities Completed and being Monitored

Committee Priorities	Current Activities	Status
Rural Stroke Work Group	• Provider QR code for member participation	

RURAL Stroke Work Group

GETAC Rural Stroke Work Group

Sign-up

Stroke Committee

- Committee items needing council guidance
  1. Letter stating quality and patient safety issues.
  2. Prehospital EMS stroke triage algorithm
  3. Stroke terminology for interfacility transfers
  4. DIDO performance measures

- Stakeholder items needing council guidance
  1. None at this time.

- Items referred to GETAC for future action
  1. Pediatric prehospital stroke algorithm