



## Prehospital and Interhospital Stroke Triage Plan

Central Shenandoah EMS Council, Inc.

Serving Emergency Services Providers in:

**Augusta, Bath, Highland, Rockbridge, Rockingham,**  
Buena Vista, Harrisonburg, Lexington, Staunton and Waynesboro

Last Reviewed: June 2017

***This plan is written to coordinate with and supplement Virginia's State Stroke Triage Plan.***

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# EXECUTIVE SUMMARY

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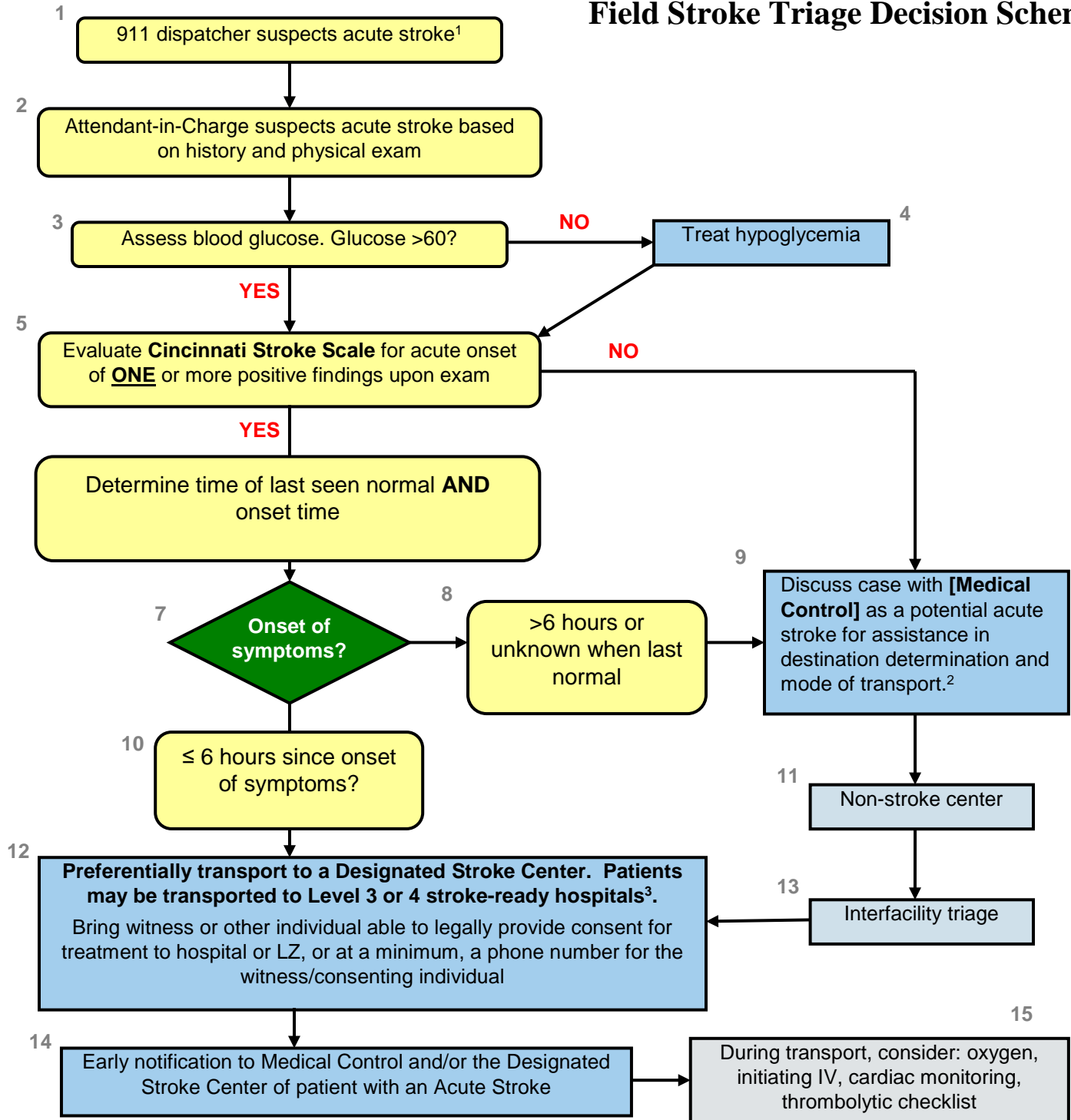
Under the *Code of Virginia § 32.1-111.3*, The Office of Emergency Medical Services acting on behalf of the Virginia Department of Health has been charged with the responsibility of maintaining a Statewide Stroke Triage Plan. The Statewide Stroke Triage Plan establishes a strategy through formal regional stroke triage plans that incorporate each region's geographic variations and acute stroke care capabilities and resources, including hospitals designated as "Primary Stroke Centers" through certification by the Joint Commission or a comparable process consistent with the recommendations of the Brain Attack Coalition. This regional plan was developed for use by agencies and hospitals in the Central Shenandoah EMS region, and follows the guidelines set forth in the Statewide plan, and addresses prehospital and inter-hospital patient transfers.

The purpose of the Stroke Triage Plan is to establish a uniform set of criteria for the prehospital and inter-hospital triage and transport of acute stroke patients. This plan augments the State Stroke Triage Plan, acknowledging and addressing variations in regional EMS and hospital resources. This Stroke Triage Plan addresses patients experiencing an "acute stroke." For the purposes of this document, "acute stroke" is defined as any patient suspected of having an acute cerebral ischemic event or stroke with the onset of any one symptom within a three hour period. The primary focus of the plan is to provide guidelines to facilitate the early recognition of patients suffering from acute stroke and to expedite their transport to a Designated Stroke Center able to provide definitive care within an appropriate time window.

It is very important to note that because of the continuing evolution of scientific evidence indicating successful management of acute stroke greater than the three-hour time window, *real-time contact with on-line medical control should be freely used to discuss individual cases outside the three-hour window*. In selected cases it may be determined that expeditious transfer or transport directly to a Designated Stroke Center may be of beneficial for a specific patient.

Some selected acute stroke types may benefit from intervention *up to 24 hours* following symptom onset. Regardless of time of onset the sooner an acute stroke is treated, the better the potential outcome ("Time is Brain"). Based on an individual patient's time of onset and following discussion with on-line medical control, consider what mode of transport would be most appropriate to transport the patient expeditiously to a Designated Stroke Center.

# Field Stroke Triage Decision Scheme



<sup>1</sup> See additional PSAP considerations under the Public Safety Answering Point Recommendations section.

<sup>2</sup> If time from symptom onset is more than 6 hours, discuss case with Medical Control as a potential acute stroke for destination determination. Recall that patients with specific acute stroke types may benefit from intervention up to 24 hours, although the sooner an acute stroke is treated, the better the potential outcome. Based on patient time of onset and discussion with Medical Control, consider whether use of helicopter EMS will offer potential benefit to the patient, either in time to Designated Stroke Center, or for critical care management expertise. EMS does not determine whether a patient is excluded from any or all therapeutic options. Final decisions regarding patient eligibility for any given intervention will be determined by the receiving physician(s).

<sup>3</sup> Stroke-ready hospital is defined as having a plan for the treatment of acute stroke and offering thrombolytic therapy.

# CSEMS STROKE PROTOCOL

## Protocol 4.26

### MEDICAL – STROKE/TIA

1. Perform general patient management ([SECTION 1](#)).
2. Support life-threatening problems associated with airway, breathing, and circulation. *Be alert for aspiration, upper airway obstruction and hypoventilation.*
3. Administer oxygen for patients experiencing respiratory distress or titrate oxygen to minimum necessary to achieve SpO<sub>2</sub> ≥94%.
4. Determine time last seen normal **AND** time of onset of signs and symptoms. (See key points)
5. Perform Cincinnati Prehospital Stroke Scale evaluation. If positive, perform VAN Stroke Assessment.
6. Perform rapid glucose determination. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia, refer to the [HYPOGLYCEMIA](#) protocol.
7. Position patient with head elevated 30° unless the patient shows signs or symptoms of hypoperfusion.
8. **Report “Stroke Alert” to the receiving hospital as early as possible.** Ensure hospital is notified of the time last seen normal **AND** time of onset of signs and symptoms. Scene time should be less than 10 minutes.
9. Establish an INT or IV of normal saline at KVO. Unless the patient is hypotensive (SBP <90 mm Hg), intervention for blood pressure is not recommended. It is preferred to establish bilateral INT or IV when possible but do not delay transport.
10. Place patient on cardiac monitor.
11. Transport to closest appropriate facility (i.e. Comprehensive Stroke Center, Primary Stroke Center or a stroke-ready hospital that employs the use of telemedicine).
12. If the **VAN Stroke Assessment is positive** and if the **transport time is greater than 30 minutes**, consider rendezvous with air medical support. Do not delay patient transport.
13. **IMPORTANT:** Ensure that a witness accompanies the patient to the hospital/LZ or a contact telephone number for the witness is secured for the hospital. **Record the time last seen normal and witness telephone number on the patient’s forearm.**
14. Perform reassessment as indicated.

|  | EMR | EMT | AEMT | INT | PM |
|--|-----|-----|------|-----|----|
| 1. Perform general patient management ( <a href="#">SECTION 1</a> ).   | •   | •   | •    | •   | •  |
| 2. Support life-threatening problems associated with airway, breathing, and circulation. <i>Be alert for aspiration, upper airway obstruction and hypoventilation.</i>   | •   | •   | •    | •   | •  |
| 3. Administer oxygen for patients experiencing respiratory distress or titrate oxygen to minimum necessary to achieve SpO <sub>2</sub> ≥94%.   | •   | •   | •    | •   | •  |
| 4. Determine time last seen normal <b>AND</b> time of onset of signs and symptoms. (See key points)  | •   | •   | •    | •   | •  |
| 5. Perform Cincinnati Prehospital Stroke Scale evaluation. If positive, perform VAN Stroke Assessment.   | •   | •   | •    | •   | •  |
| 6. Perform rapid glucose determination. If glucose less than 60 mg/dL or clinical signs and symptoms indicate hypoglycemia, refer to the <a href="#">HYPOGLYCEMIA</a> protocol.  | •   | •   | •    | •   | •  |
| 7. Position patient with head elevated 30° unless the patient shows signs or symptoms of hypoperfusion.  | •   | •   | •    | •   | •  |
| 8. <b>Report “Stroke Alert” to the receiving hospital as early as possible.</b> Ensure hospital is notified of the time last seen normal <b>AND</b> time of onset of signs and symptoms. Scene time should be less than 10 minutes.                              | •   | •   | •    | •   | •  |
| 9. Establish an INT or IV of normal saline at KVO. Unless the patient is hypotensive (SBP <90 mm Hg), intervention for blood pressure is not recommended. It is preferred to establish bilateral INT or IV when possible but do not delay transport.             |     |     | •    | •   | •  |
| 10. Place patient on cardiac monitor.  |     |     |      | •   | •  |
| 11. Transport to closest appropriate facility (i.e. Comprehensive Stroke Center, Primary Stroke Center or a stroke-ready hospital that employs the use of telemedicine).   |     | •   | •    | •   | •  |
| 12. If the <b>VAN Stroke Assessment is positive</b> and if the <b>transport time is greater than 30 minutes</b> , consider rendezvous with air medical support. Do not delay patient transport.  |     | •   | •    | •   | •  |
| 13. <b>IMPORTANT:</b> Ensure that a witness accompanies the patient to the hospital/LZ or a contact telephone number for the witness is secured for the hospital. <b>Record the time last seen normal and witness telephone number on the patient’s forearm.</b> | •   | •   | •    | •   | •  |
| 14. Perform reassessment as indicated.   | •   | •   | •    | •   | •  |

| Cincinnati Prehospital Stroke Scale / FAST exam            |   |
|--|---|
| <b>F-(face)</b>  | <b>FACIAL DROOP: Have patient smile or show teeth. (Look for asymmetry)</b><br><b>Normal:</b> Both sides of the face move equally or not at all.<br><b>Abnormal:</b> One side of the patient's face droops.                     |
| <b>A-(arm)</b>   | <b>*MOTOR WEAKNESS: Arm drift (close eyes, extend arms, palms up)</b><br><b>Normal:</b> Remain extended equally, drifts equally, or does not move at all.<br><b>Abnormal:</b> One arm drifts down when compared with the other. |
| <b>S-(speech)</b>  | <b>"You can't teach an old dog new tricks." (repeat phrase)</b><br><b>Normal:</b> Phrase is repeated clearly and correctly.<br><b>Abnormal:</b> Words are slurred (dysarthria) or abnormal (aphasia) or none.                   |
| <b>T-Time</b>  | Time <b>last seen normal:</b> _____<br>Time of <b>Symptom onset:</b> _____  |
| <b>*If arm weakness is present, perform VAN Assessment</b> |   |

| VAN Assessment  |  |
|---|--|
| <b>***Perform only if arm weakness observed during Cincinnati Test***</b>   |  |
| <b>VISION</b>   |  |
| Provider holds up 2 fingers to the right and 1 finger to left while patient stares at provider's nose. <i>(Left and Right Visual Fields)</i>  |  |
| Can patient correctly identify number of fingers on both sides?   | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| Ask the patient to look to the left and right one or more times. <i>(Double Vision- equal eye movement)</i>   |  |
| Do both eyes move at the same speed and same direction?   | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| <b>APHASIA</b>  |  |
| Show patient 2 common objects (i.e. pen, clothing) and ask patient to verbally identify objects. <i>(Produce Language)</i>  |  |
| Can patient verbally and correctly identify both objects?<br><b>*Ignore slurred speech</b>  | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| Ask the patient to follow 2 simple commands (i.e. blink and make a fist). <i>(Comprehend Language)</i>  |  |
| Can patient follow both commands?   | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| <b>NEGLECT</b>  |  |
| Ask patient to follow your finger with only their eyes from far left to far right. <i>(Forced Gaze / Inability to Track to One Side)</i>  |  |
| Can patient track your finger?  | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| Ask the patient to close their eyes with arms by their side. Begin brushing patient's forearms simultaneously down towards their hands with your fingers and ask, "Which arm am I touching?" <i>(Equal Arm Sensation)</i> |  |
| Can patient feel both arms at same time?  | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| Observe if the gazes or turns to only one side or does not react to stimuli on one side (i.e. does not turn to face someone or does not seem to hear from one side). <i>(Ignoring One Side)</i>                           |  |
| Can patient freely look, move, and react to stimuli on both sides?  | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| <p align="center"><b>If "NO" to <u>any one</u> of the above with arm weakness:</b><br/>                     Notify receiving facility of "stroke alert with positive VAN test."</p>                                       |  |

## Key Points: MEDICAL – STROKE/TIA

- VAN stands for vision, aphasia, and neglect. The VAN Stroke Assessment evaluates for large vessel occlusions (LVO) by identifying visual disturbance, aphasia, and/or neglect. LVO strokes should be suspected when any of these symptoms as well as arm drift are present. Current guidelines propose that LVO strokes are best managed at Comprehensive Stroke Centers with 6 hours of symptom onset. Primary Stroke Centers and “stroke-ready” hospitals still render critical treatment and diagnostic tests and are the appropriate destination if the transport time is within 30 minutes. Recognizing and reporting a positive VAN Assessment and an accurate time of symptom onset to the receiving facility can expedite the patient receiving optimal definitive care and is the most important part of prehospital stroke management.
- If arm weakness is observed during the Cincinnati Stroke Test, perform a VAN Assessment. If any part of the VAN is positive, urgently transport to the closest appropriate facility. If the transport time to the nearest appropriate facility is > 30 minutes, request air medical support. If the Cincinnati Test is positive but does not involve arm weakness, do not perform a VAN Assessment and transport to the nearest “stroke-ready” facility.
- The Attendant-In-Charge should provide their contact information to the receiving facility for any follow-up needed following transfer of care.
- Record time of onset of symptoms **on the patient**. Consider recording information on tape and affixing to patient’s forearm.
- If patient woke up with stroke symptoms, report a “wake-up stroke,” to the receiving facility ASAP and obtain accurate times that the patient went to sleep and woke up.
- Major stroke organizations state that documenting “tPA,” is associated with increased medical errors and recommend documenting, “Alteplase/tPA,” instead.

<sup>1</sup> Local variance: In some circumstances, transporting to a “stroke-ready” hospital may be appropriate. Hospital should conduct telemedicine and administer Alteplase/tPa.

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# PUBLIC SAFETY ANSWERING POINT (PSAP) RECOMMENDATIONS

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Public Safety Answering Points are typically the first point of contact for a patient entering the Emergency Medical Services system. Emergency medical telecommunicators serve as a vital connection between the patient, responding EMS providers and the stroke system of care. It is imperative that the stroke system of care provide education and training to 911 personnel to provide early recognition and to minimize delays in prehospital dispatch. Emergency medical telecommunicators must identify and provide high-priority dispatch to patients with stroke symptoms. Current literature suggests that the use of scripted stroke-specific screens during a 911 call may be helpful.

Public Safety Answering Points should develop the following procedures or programs to better serve the stroke system of care.

- Emergency Medical Dispatch (EMD) - A systematic program of handling medical calls for assistance. Trained telecommunicators, using locally-approved EMD Guidecards, quickly and properly determine the nature and priority of the call, dispatch the appropriate response and then give the caller instructions to help treat the patient until the responding EMS unit arrives.
- Hospital notification at the time of dispatch of EMS units when a stroke is suspected.
- Included questioning in the EMD program to determine the time of onset of signs and symptoms (when the patient last seen normal), which would be relayed to responding EMS units.

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## ACUTE STROKE PATIENT TRANSPORT CONSIDERATIONS

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### ***Mode of Transportation:***

Each locality within the Central Shenandoah EMS region is unique in its availability of EMS and acute stroke care resources. Consideration should be given to the hospitals that are available in the region and the resources that they have available to acute stroke patients when developing plans and protocols, as well as EMS system capacity. Augusta Health and Sentara RMH Medical Center are Designated Stroke Centers. Bath Community Hospital and Carilion Stonewall Jackson Hospital are Critical Access hospitals that have enhanced access to and agreements with Designated Stroke Centers providing telemedicine, immediate consultation and advanced capabilities that enable them to positively impact the care of acute stroke victims.

### ***Rapid Transportation:***

Because stroke is a time-critical illness, time is of the essence, and EMS should rapidly initiate transport once acute stroke is suspected. Consideration should also be given to prehospital resources including use of helicopter EMS (HEMS) available at the time of the incident, and other conditions such as transport time and weather conditions. Use of HEMS can facilitate acute stroke patients reaching Designated Stroke Centers in a timeframe that allows for acute treatment interventions. The likelihood of benefit of acute stroke therapy decreases with time, but there are several therapy options which may offer benefit outside the standard 3 hour window. Interventions may include any or all of the following: specialty physician or ICU capability, medical therapy (such as Alteplase IV r-tPA or new endovascular therapies), radiologic evaluation and procedures (MRI, intraarterial thrombolytics, mechanical thrombectomy), or life-saving emergent surgery (hemispherectomy, large artery thrombus extraction).



### **Helicopter EMS (HEMS) Transportation Considerations:**

Field transports of acute stroke patients by helicopter as defined in this plan:

1. Should significantly lessen the time from scene to a Comprehensive Stroke Center compared to ground transport.
2. Should be utilized to achieve the goal of having acute stroke patients expeditiously transported, ideally within three hours of symptom onset.
3. Should only be to non-stroke centers in very unusual circumstances and after consultation with on-line medical control. If a HEMS resource is used, the patient should be transported directly to a Comprehensive Stroke Center.

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## DESIGNATED STROKE CENTERS

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The Commonwealth of Virginia defines a Designated Stroke Center as a hospital that has achieved Primary Stroke Center Certification by the Joint Commission. The process of Stroke Designation/Certification is entirely voluntary on the part of the hospitals and identifies hospitals that have established and maintain an acute stroke program that provides a specific level of medical, technical, and procedural expertise for acute stroke patients. Designation ensures that the hospital is prepared to provide definitive acute stroke care at all times and has an organized approach to providing clinical care, performance improvement, education etc. The list of Designated Stroke Centers in Virginia includes:

|  |   |
|--|---|
| <b>Augusta Health, Fishersville, VA</b>                | Mary Washington Hospital                                      |
| Bon Secours DePaul Medical Center                      | Maryview Hospital   |
| Bon Secours Memorial Regional Medical Center           | Reston Hospital Center  |
| Bon Secours Richmond Community Hospital                | Riverside Regional Medical Center                             |
| Bon Secours St Francis Medical Center                  | Sentara CarePlex Hospital                                     |
| Bon Secours St. Mary's Hospital                        | Sentara Leigh Hospital  |
| <b>Carilion Roanoke Memorial Hospital, Roanoke, VA</b> | <b>Sentara Martha Jefferson Hospital, Charlottesville, VA</b> |
| Centra Lynchburg General Hospital                      | Sentara Norfolk General Hospital                              |
| Chesapeake General Hospital                            | Sentara Northern Virginia Medical Center                      |
| CJW MC - Johnston - Willis                             | Sentara Obici Hospital  |
| CJW MC Chippenham                                      | Sentara Princess Anne Hospital                                |
| Henrico Doctor's Hospital - Parham                     | <b>Sentara RMH Medical Center, Harrisonburg, VA</b>           |
| Henrico Doctor's Hospital - Retreat                    | Sentara Virginia Beach General Hospital                       |
| Henrico Doctor's Hospital, Richmond                    | Southside Regional Medical Center                             |
| Inova Alexandria Hospital                              | The Fauquier Hospital   |
| Inova Fairfax Hospital                                 | Twin County Regional Hospital                                 |
| Inova Loudoun Hospital                                 | <b>UVA Medical Center, Charlottesville, VA</b>                |
| Inova Mount Vernon                                     | VCU Medical Center  |
| Inova Mount Vernon – Cornwall Campus                   | Virginia Hospital Center                                      |
| John Randolph Medical Center                           | Winchester Medical Center, Winchester, VA                     |

*Note:* Designated Stroke Centers in the above table with CSEMS region catchment areas are listed in **bold**.

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# DNV PRIMARY STROKE CENTER CERTIFICATION

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Primary Stroke Center Certification from DNV Healthcare is an opportunity for healthcare organizations providing stroke treatment to demonstrate their commitment to excellence. DNV's PSC Certification program incorporates elements from our NIAHO® hospital accreditation standards as well as requirements from the Guidelines of the Brain Attack Coalition and Recommendations of the American Stroke Association.

Hospitals seeking and maintaining a Primary Stroke Center Certification must participate in the Medicare program and be in compliance with the CoPs which may be demonstrated by maintaining accreditation with DNV or another approved CMS-approved accreditation organization. Sentara RMH Medical Center is a certified DNV Primary Stroke Center and accredited by The Joint Commission.

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## INTERHOSPITAL TRIAGE CRITERIA

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When acute stroke patients cannot be transported directly to a Designated Stroke Center in a timely manner, ideally within the three-hour window, consideration may be given to transport to a closer hospital. Various hospitals meet many of the components of a Designated Stroke Center based on national survey results and would be the next logical choice. The closest hospital may not be the most appropriate hospital.

### *Stroke Hospital Stratification Definitions*

|                |  |
|----------------|--|
| <b>Level 1</b> | <b>Comprehensive Stroke Center (CSC):</b> As defined by the Brain Attack Coalition (BAC) criteria and survey. A CSC can provide care for all levels of acute, sub-acute and chronic stroke and stroke related conditions (diabetes, hypertension, rehabilitation, investigational therapies, etc.). A CSC can also provide care for the most complex stroke patients including but not limited to those requiring expertise in neurosurgical, neuroimaging, neurointerventional, and neuroclinical care. There is not a current certification program for CSCs but the BAC recommendations for CSCs can be found on their web site.  |
| <b>Level 2</b> | <b>Survey-Reported Stroke Center (S-RSC):</b> Information reported by the hospitals through the survey process stratified these institutions at the level defined by the accrediting bodies certification criteria (developed in collaboration with the American Stroke Association and based on the Brain Attack Coalition's "Recommendations for the Establishment of Primary Stroke Centers"). This level of institution should be encouraged to validate their hospital roles stratification through Joint Commission certification as a Primary Stroke Center. For further information see The Joint Commission web site.   |
| <b>Level 3</b> | <b>Basic Stroke Service (BSS):</b> This is typically a larger institution that may not have the stroke volume, market competition or strategic initiative to become a certified PSC but has many of the components of a PSC as noted in national survey results (5, 6). By definition this type of institution can fulfill many of the functions of a PSC, although the strategic administrative, clinical, fiscal and/or market impetus is not present to create the internal support for implementing the remaining infrastructure components. This type of institution may or may not plan to seek PSC certification.   |
| <b>Level 4</b> | <b>Initial Entry Access (IEA):</b> Although this type of institution may have a fully functional Emergency Department, they may not have the stroke volume to provide the impetus to invest in the full infrastructure of a PSC or seek certification. This is typically a smaller institution, those with a very limited stroke population and/or PSC capability only during weekday working hours. They may treat and transport or elect to transfer acute strokes. Implementation of telemedicine/teleradiology, transfer agreements and pre-planned transfer routes/service will be most useful in integrating this type of institution within a regional stroke system. |

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# ACUTE STROKE CARE HOSPITAL ROLES

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|                |  |
|----------------|--|
| <b>Level 1</b> | University of Virginia Medical Center, Charlottesville, VA |
| <b>Level 1</b> | Winchester Medical Center, Winchester, VA                  |
| <b>Level 2</b> | Sentara RMH Medical Center, Harrisonburg, VA               |
| <b>Level 2</b> | Augusta Health, Fishersville, VA                           |
| <b>Level 2</b> | Carilion Roanoke Memorial Hospital, Roanoke, VA            |
| <b>Level 2</b> | Sentara Martha Jefferson Hospital                          |
| <b>Level 4</b> | Bath County Community Hospital, Hot Springs, VA            |
| <b>Level 4</b> | Carilion Stonewall Jackson Hospital, Lexington, VA         |

These considerations are addressed specifically within this regional plan in a manner consistent with the state stroke plan, and will be updated as hospital resource availability changes. The default destination for acute stroke patients is a Designated Stroke Center. Stroke triage plans provide guidance for situations where patients are transported to non-stroke centers, as well as specific guidance for use of HEMS for transport to Designated Stroke Centers.

Non-stroke center hospitals, including Carilion Stonewall Jackson Hospital and Bath County Community Hospital, have transfer guidelines and agreements in place for the expeditious and appropriate management of acute strokes when the care required exceeds their capabilities. These guidelines are especially critical for transfer of patients following thrombolysis since specific protocols must be followed to diminish the risk of cerebral or systemic hemorrhagic complications.

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## STROKE TRIAGE QUALITY MONITORING

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The Virginia Office of EMS, acting on behalf of the Commissioner of Health, will report aggregate acute stroke triage findings on an intermittent basis, but no less than annually, to assist EMS systems and the Virginia Stroke Systems Task Force to improve the agency, regional, and Statewide Stroke Triage Plans. A de-identified version of the report will be available to the public and will include, minimally, as defined in the statewide plan, the frequency of (i) over and under triage to Designated Stroke Centers in comparison to the total number of acute stroke patients delivered to hospitals and (ii) interfacility transfers that do not meet criteria for transfer to Designated Stroke Centers (iii) HEMS utilization. The program reports shall be used as a guide and resource for health care providers, EMS agencies, EMS regions, the Virginia Office of EMS, and the Virginia Stroke Systems Task Force. Additional specific data points to be collected within the EMS prehospital patient care report (written or electronic) will be established collaboratively between OEMS and VSSTF. Information to be contained in routine reports on both system and patient-level indicators and outcomes will be developed by OEMS to guide further system development in a patient focused way.

Hospitals, EMS agencies, and EMS Regions are encouraged to utilize their performance improvement programs to perform quality monitoring and improve the delivery of acute stroke care within their regions.

Annual reporting on the State Stroke Triage Plan will typically be provided through the OEMS, Division of Trauma/Critical Care's "Trends" report and on an ad-hoc basis in response to appropriate inquiries.

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## STROKE RELATED RESOURCES

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### *Certified Stroke Centers*

The process of Stroke Certification is entirely voluntary on the part of the hospitals and identifies hospitals that have established and maintain an acute stroke program that provides a specific level of medical, technical, and procedural expertise for acute stroke patients. Certification ensures that the hospital is prepared to provide definitive acute stroke care at all times and has an organized approach to providing clinical care, performance improvement, education etc. Neither the Commonwealth of Virginia government, nor the Virginia State Stroke System Task Force (VSSTF) certifies stroke centers.

#### Joint Commission Certified Stroke Centers

- [Certification Data Download - Data Download | QualityCheck.org](#)

#### DNV Certified Stroke Centers

- [DNV GL - Healthcare | DNV GL - Healthcare](#)

#### Link to a map of Virginia Stroke Certified Hospitals

- [http://www.vdh.virginia.gov/content/uploads/sites/26/2017/01/Stroke\\_hospital\\_Map5.pdf](http://www.vdh.virginia.gov/content/uploads/sites/26/2017/01/Stroke_hospital_Map5.pdf)

#### Virginia Stroke System Web page

- [Virginia Stroke Systems Task Force – Heart Disease and Stroke](#)

#### Virginia Office of EMS Stroke Web page

- <http://www.vdh.virginia.gov/OEMS/Trauma/Stroke.htm>

#### The Joint Commission

- [What is Accreditation? | Joint Commission](#)

#### American Heart Association

- [Stroke Resources for Professionals](#)

#### National Stroke Association

- [Stroke Resources | Stroke.org](#)

#### Centers for Disease Control and Prevention

- [Stroke Information | cdc.gov](#)