



OHIO EMERGENCY MEDICAL SERVICES



Robert L. Wagoner, Executive Director
www.ems.ohio.gov

Ohio

**Department of
Public Safety**



Mike DeWine, Governor

Thomas J. Stickrath, Director

Jon Husted, Lt. Governor

Robert L. Wagoner, Executive Director

TO: All EMS agency medical directors, physician advisory board members, and EMS agencies
FROM: Ohio Department of Public Safety, Division of EMS
DATE: December 20, 2021
RE: Senate Bill 21: Emergency Medical, Fire, and Transportation Services Board final approved Acute Stroke Guideline and the amendment of Ohio Revised Code 4765.401 regarding emergency medical services and stroke patient protocols

On behalf of the Ohio Department of Public Safety, Division of Emergency Medical Services (EMS) and the Emergency Medical, Fire, and Transportation Services (EMFTS Board), we thank Ohio's hospital leaders and Ohio Department of Health-designated stroke hospitals for their review and valuable input since August 2021 concerning our revised acute stroke guideline. The final edited acute stroke guideline, which reflects this feedback, was reviewed and approved by the EMFTS Board on Dec. 15, 2021. The [State of Ohio Adult Guidelines and Procedures Manual](#) has also been updated to reflect the revised acute stroke guideline (pp. 83-86 of this linked document).

As a review, Governor DeWine signed Senate Bill 21 into law on June 22, 2021 amending Ohio Revised Code 4765.401. The new legislation focused on emergency medical services and required the EMFTS Board to develop guidelines for the assessment, triage, and transport of stroke patients to hospitals by EMS personnel. During the development of these guidelines, the EMFTS Board was directed to consult with a diverse group of hospital leaders around Ohio, including those that represent large health systems, hospitals not affiliated with a large health system, and hospitals located in rural communities as well as comprehensive stroke centers, primary stroke centers, and acute stroke ready hospitals recognized as such by the Ohio Department of Health.

Now that the EMFTS Board has approved the revised acute stroke guideline, Senate Bill 21 requires the medical director or cooperating physician advisory board of each EMS organization to consult with one or more local hospitals to establish written protocols for the assessment, treatment, and transport of stroke patients to hospitals. In order to comply with this law, a copy of each protocol must also be submitted to the EMFTS Board, the Department of Health, and the regional director or regional advisory board appointed under ORC 4765.05 by March 20, 2022.

Analogous to the other guidelines, the acute stroke guideline in the State of Ohio Guidelines and Procedures Manual is provided solely as a resource, and its adoption is not mandatory. While the EMFTS Board has the authority to determine the scope of practice for certified Ohio EMS providers, the medical director of each Ohio EMS agency, a physician who meets the qualifications in Ohio Administrative Code 4765-3-05, has the authority over the written protocols utilized by the Ohio EMS personnel for whom they provide oversight. The EMFTS Board is cognizant of the varied EMS and healthcare resources that are available in the jurisdictions throughout Ohio. Emergency response systems may need to follow different operational pathways to achieve the same goals for patient care and outcomes. In the interest of seamless patient care, it is important for Ohio EMS medical directors and Ohio EMS agencies to collaborate with their respective healthcare systems and transport destinations to determine the parameters within their respective written protocols, taking local resources, transport times, certification levels of the responding EMS clinicians, and emergency department neurology protocols into consideration.

Thank you for your assistance, cooperation, and understanding as we continue working collaboratively to comply with this new law. It is our sincere hope that the updated State of Ohio acute stroke chapter will provide a valuable resource to support implementation of Senate Bill 21 in order to focus efforts to improve patient care and outcomes for stroke patients who receive initial management and transport by Ohio's EMS agencies. **We look forward to receiving an electronic copy of your updated stroke protocol by March 20, 2022.** To assist medical director compliance with the law, the Ohio Department of Public Safety, division of EMS will forward copies of all stroke protocols received from Ohio EMS medical directors and EMS agencies to the appropriate regional physician advisory board or regional director. Copies of your updated stroke protocols for the department of health should be sent to:

Ohio Department of Health
Office of the Medical Director
246 North High Street
Columbus, OH 43215

They may also be submitted electronically to:

john.weigand@odh.ohio.gov
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ACUTE STROKE

GENERAL CONSIDERATIONS

- A. Patients who experience a transient ischemic attack (TIA) develop most of the same signs and symptoms as those who are experiencing a stroke. The signs and symptoms of TIAs can last from minutes up to a few hours. Thus, the patient may initially present with typical signs and symptoms of a stroke, but those findings may progressively resolve. TIAs are frequently a warning sign of impending stroke. Therefore, the patient needs to be transported, without delay, to the most appropriate hospital for further evaluation even if the TIA has resolved.
- B. Some patients who have had a stroke may be unable to communicate but can understand what is being said to and around them.
- C. Place the patient's affected or paralyzed extremity in a secure and safe position during patient movement and transport.
- D. Hypertension in stroke patients routinely should not be treated in the prehospital setting. Any treatment of hypertension should be completed with on-line medical direction. Nitroglycerin should not be used unless signs and symptoms consistent with acute myocardial infarction (AMI) are present.
- E. New therapies for stroke are now available. Stroke patients can receive effective acute treatment up to 24 hours after the onset of symptoms. Early notification of the receiving hospital and minimizing scene time are important elements of a strategy to treat stroke patients quickly and improve patient outcomes.
- F. Time of onset of signs and symptoms must always be obtained, documented, and relayed to the receiving facility. Time of onset is defined as the time the patient was last known to be at their normal baseline unless the onset was witnessed. Time of onset of symptoms needs to be accurately determined for consideration of thrombolytic therapy or endovascular intervention. In patients whose symptoms were present upon awakening, their symptom onset is estimated from the last time that the patient's neurologic status was known to be at their normal baseline neurologic status or the time just prior to going to sleep ("last known well").
- G. When obtaining the patient's medical history, ask the patient or family members on scene if the patient takes warfarin or any other anticoagulant medication. If known by the patient or the family, obtain the medical condition for which the patient has been prescribed an anticoagulant and if the patient has fallen during the onset of stroke symptoms or has sustained recent trauma.
- H. A validated prehospital stroke scale and a validated prehospital stroke severity scale should be used during the assessment of a stroke patient. If available, telemedicine is a valuable adjunct for patient assessment and triage. Currently, there is no evidence-based research that demonstrates that one prehospital stroke assessment tool is superior compared to others. In addition, stroke scales have not been validated for pediatric patients. A validated prehospital stroke scale may include, but is not limited to, assessment of:
 - 1. Facial droop/smile/grimace
 - 2. Arm drift
 - 3. Speech

A validated prehospital stroke severity scale may include, but is not limited to, presence of:

- 1. Vision disturbance

2. Aphasia
3. Sensory neglect

- I. Patients who are poorly responsive to verbal or painful stimuli, exhibiting decorticate or decerebrate posturing, or have a rapid decline in their neurologic status need ALS as soon as possible.
- J. The acuity of hospitals with certified stroke centers includes acute stroke ready, primary stroke, thrombectomy-capable, and comprehensive stroke centers. Certified thrombectomy-capable and comprehensive stroke centers have endovascular thrombectomy (EVT) capabilities for the treatment of stroke victims with a large vessel occlusion (LVO).
- K. Patients for whom the onset of stroke symptoms can be confirmed within 24 hours or less of the activation of initiation of the emergency response system should be transported directly to a certified stroke center based upon the local resources and stroke system of care. Patients with a suspected LVO based upon the use of a stroke severity tool should be transported to a thrombectomy-capable or comprehensive stroke center if the additional transport time is not more than 15 – 30 minutes. At a minimum and as a secondary option, the patient with a suspected acute stroke should be transported to a hospital with a functioning CT scanner and emergent radiology services available.

EMT

- A. Open and manage the airway and provide oxygen by nasal cannula 4 L/min and increase as needed with respiratory distress.
 1. Apply pulse oximeter and treat per procedure. Maintain 94 – 98% SpO₂.
 2. Be prepared to oxygenate and/or assist ventilations with oral or nasal airway and BVM or PPV.
- B. Evaluate patient's general appearance, relevant history of condition and determine:

Onset of the event
Provocation or palliation
Quality of the pain
Region and radiation
Severity
Time

Signs and symptoms
Allergies
Medications
Past Medical History - especially, recent surgery, any abnormal related ingestion, previous trauma, related medical diseases
Last oral intake
Events leading to present illness

- C. Determine blood glucose level.
 1. For a blood glucose < 60 mg/dL, administer 1 tube of oral glucose. May be repeated in 10 minutes if blood glucose remains below 60 mg/dL.

PATIENT MUST HAVE A GAG REFLEX

2. Blood glucose ≥ 60 mg/dL, begin immediate transport.
- D. If unable to check blood glucose, with signs of stroke, establish communications with medical direction and advise of patient condition.
- E. Transport immediately unless an ALS unit is enroute for a stroke patient with severe or worsening symptoms and has an ETA of less than 5 minutes to the scene.

AEMT

- A. Assist EMS professionals, obtain patient condition and circumstance.
- B. Apply monitor and check rhythm.
- C. Start heplock/saline lock or IV normal saline TKO while enroute to hospital.
- D. Determine blood glucose level.
 - 1. If blood glucose less < 60 mg/dL, administer dextrose 25 Gm IV push or glucagon 1 mg IM. The administration may be repeated in 10 minutes if blood glucose remains below 60 mg/dL.

DO NOT DELAY TRANSPORT

PARAMEDIC

- A. Assume charge of situation and confer with EMS professionals about condition of patient and situation.
- B. If patient does not have a secure protected airway, intubate per the endotracheal intubation guideline.
- C. Apply monitor and check rhythm.
- D. Establish heplock/saline lock or IV normal saline TKO.
- E. Determine blood glucose level.
 - 1. If blood glucose < 60 mg/dL, administer dextrose 25 Gm IV push or glucagon 1 mg IM. The administration may be repeated in 10 minutes if blood glucose remains below 60 mg/dL.
- F. Re-evaluate patient condition, contact medical direction, and transport immediately to hospital.

