



1200 N. Telegraph Road Bldg. 36E, Pontiac, Michigan 48341  
Telephone: 248 975-9704 Fax: 248 975-9723 Website: [www.ocmca.org](http://www.ocmca.org)

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October 10, 2017

To Whom It May Concern:

Attached is the Oakland County Medical Control Authority's (OCMCA) Stroke Systems of Care Special Study. The Michigan Department of Health & Human Services Bureau of EMS Trauma & Preparedness approved this Study on September 29, 2017. The education for this study will be conducted from October through December 2017 with the participating life support agency (LSA). The Study will begin on January 1, 2018.

The OCMCA and the Bloomfield Township Fire Department may only utilize this document, along with the education materials. At this time, the OCMCA does not give permission to any hospital, life support agency, or Medical Control Authority (MCA) to use this Study or its educational materials for any purposes.

Please contact the OCMCA with any questions at 248-975-9704 or [QI@OCMCA.org](mailto:QI@OCMCA.org).

Sincerely,

*Steve McGraw*

Steve McGraw, DO  
EMS Medical Director  
Oakland County Medical Control Authority



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## ***OCMCA Stroke Systems of Care Special Study***

### **Special Study Summary**

Patients suffering from a large vessel occlusion (LVO) stroke are candidates for endovascular therapy (EVT). In the last year, the Oakland County Medical Control Authority (OCMCA) has reviewed compelling data that supports the potential positive impact of prehospital identification of LVO strokes by EMS. The OCMCA is proposing a special study to determine if EMS personnel can identify patients that are candidates for EVT with a reasonable degree of accuracy, utilizing a prehospital stroke severity scale. The OCMCA formed a Neurology Expert Sub-Committee consisting of neurointerventionalists, hospital stroke coordinators and ER physicians to identify the most appropriate stroke severity scale to utilize. It was unanimously decided by the sub-committee that the Field Assessment Stroke Triage for Emergency Destination (FAST-ED) will be the prehospital stroke severity scale utilized during this special study (see page 3 for details regarding FAST-ED). The OCMCA has developed a special study protocol that includes the use of FAST-ED (see pages 4-6 for details regarding the OCMCA Stroke Special Study Protocol).

Two OCMCA hospitals have volunteered to participate in this special study. Beaumont Hospital Royal Oak (BHRO) and St. Joseph Mercy Oakland (SJMO). BHRO is a Comprehensive Stroke Center (CSC) and SJMO is a Primary Stroke Center (PSC) capable of EVT 24/7/365. The OCMCA will provide each of the participating hospitals with education resources on the essential components of FAST-ED, EMS "STROKE ALERT" notifications and the EMS documentation that they should expect to receive from the participating Life Support Agencies (LSAs).

The OCMCA LSA that volunteered to participate in this special study meets specific criteria listed on page 2. This LSA functions in a geographic service area that exclusively transports stroke patients to either SJMO or BHRO. The current OCMCA Transportation Protocol 6-28 will continue to be followed. It must be emphasized that bypassing a hospital with a stroke patient will not occur during this study.

All EMS providers at the participating LSA will receive a total of six hours of education, consisting of three hours of lecture and three hours of practical (see EMS Special Study Education Overview on pages 7-11 for details). In addition, following the completion of the education, each EMS provider will be required to complete a stroke special study knowledge assessment and practical skills verification. A special study start date will be determined following the completion of the required education, skills verification, and knowledge assessment process.

Once the special study begins, the participating LSA will be required to formally notify the OCMCA of any patient transported with a differential diagnosis of stroke (see page 13 for details on the Stroke Special Study: LSA Stroke Notification Form). The receiving hospital will then be required to formally submit specific data to the OCMCA (see page 14 for details on the Stroke Special Study: OCMCA Hospital Data Collection Form). The OCMCA will perform an ongoing analysis of all prehospital and hospital data in order to monitor the accuracy of EMS identification of LVO stroke patients with the use of FAST-ED.

### **Special Study Reporting**

The OCMCA will report the special study findings to its Professional Standards Review Organization (PSRO) Committee on a monthly basis. In addition, the OCMCA will provide quarterly reports to the State Quality Assurance Task Force (QATF). The OCMCA proposes an initial study period of at least one year with an estimated sample size of 60 cases annually from the participating LSA.



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## **Special Study Participants**

### **Participating LSAs:**

Per OCMCA Transportation Protocol 6-28, following an EMS differential diagnosis of stroke, all patients must be transported to the closest stroke center. An LSA may be considered for inclusion into this special study if they possess the following characteristics:

- Throughout their entire geographic service area, the LSA's closest stroke center(s) must be a CSC or PSC with EVT capability 24/7/365.
- The LSA(s) must be able to complete all mandatory education and knowledge assessment components by the special study implementation date.

The following LSA meets the criteria listed above and has agreed to participate:

#### **Bloomfield Township Fire Department (BTFD)**

- EMS Coordinator: Captain Chris Whitehead
- Number of personnel: 64
- Number of stroke patient transports in 2016: Approximately 60
- Closest Stroke Centers (based on geographic service area):
  - St. Joseph Mercy Oakland (SJMO)
  - Beaumont Hospital Royal Oak (BHRO)

### **Participating Hospitals:**

SJMO and BHRO will be the hospitals participating in the special study. Each hospital will submit data to the OCMCA PSRO Committee. The data collected will be used to evaluate if OCMCA EMS providers can identify patients that are candidates for EVT with a reasonable degree of accuracy.

#### **Beaumont Hospital Royal Oak**

- Stroke Center Designation: CSC
- Physician Representative: Rebecca Grysiewicz, MD
- Stroke Coordinator: Wendy Carriveau, MSN, ACNP-BC

#### **St. Joseph Mercy Oakland**

- Stroke Center Designation: PSC (Capable of EVT 24/7/365)
- Physician Representative: Andrew Xavier, MD
- Stroke Coordinator: Heidi R. Warrington, BSN, RN, CNRN



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## Special Study Stroke Severity Scale

The OCMCA Board of Directors approved FAST-ED to be utilized in the special study on June 2, 2017. This decision was based on the recommendation of the Neurology Expert Sub-Committee, the Physician's Committee, as well as the OCMCA PSRO Committee. On May 8, 2017, the OCMCA consulted with the Neurology Expert Sub-Committee, which was comprised of neurointerventionalists, hospital stroke coordinators and ER physicians from around our system. The OCMCA facilitated a discussion regarding the specific contents and scoring criteria of the stroke severity scale that will be utilized during the special study. It was unanimously recommended that the FAST-ED stroke severity scale be utilized during the special study. FAST-ED was recommended based on the following characteristics:

- FAST-ED incorporates an "all in one" stroke screening tool and stroke severity scale. Combining both elements into a unified process will allow for a more efficient and timely assessment of potential stroke patients.
- FAST-ED has been validated to have a greater sensitivity and specificity to identify LVO in the hospital setting when compared to other stroke severity scales.
- FAST-ED utilizes terminology that is more analogous to the NIHSS than RACE, which may benefit communication between EMS and hospital staff.

Assessment Items	Score
<b>Facial Palsy</b> – Ask the patient to show their teeth or smile.	
1. Both sides of the face move equally or not at all.	0
2. One side of the face droops or is clearly asymmetric.	1
<b>Arm Weakness</b> – Ask the patient to extend both arms with palms up out in front of them, close their eyes, and hold them there for a count of 10.	
1. Both arms remain up for >10 seconds or slowly move down equally.	0
2. Patient can raise arms but one arm drifts down in <10 seconds.	1
3. One or both arms fall rapidly, cannot be lifted, or no movement occurs at all.	2
<b>Speech Changes</b>	
<b>Dysarthria</b> – Ask the patient to repeat the phrase: "The sky is blue in Michigan."	
<b>Is slurred speech present?</b> (circle one)	<b>Yes</b>   <b>No</b>
<b>Expressive Aphasia</b> – Ask the patient to name 3 common items.	
1. Names 2 to 3 items correctly.	0
2. Names only 0 - 1 items correctly.	1
<b>Receptive Aphasia</b> – Ask the patient to perform a simple command. Example: Ask the patient, "show me two fingers."	
1. Normal, patient can follow the simple command.	0
2. Unable to follow the simple command.	1
<b>Eye Deviation</b>	
1. No deviation, eyes move equally to both sides.	0
2. Patient has clear difficulty when looking to one side (left or right).	1
3. Eyes are deviated to one side and do not move to the other side.	2
<b>Denial/Neglect</b> – (Do not perform if expressive or receptive aphasia is present)	
<b>Anosognosia</b> – Show the patient their affected arm and ask, "Do you feel weakness in this arm?"	
1. Patient recognizes the weakness in their weak arm.	0
2. Patient does NOT recognize the weakness in their weak arm.	1
<b>Asomatognosia</b> – Show the patient their affected arm and ask, "Whose arm is this?"	
1. Patient recognizes their weak arm.	0
2. Patient does NOT recognize their weak arm.	1
<b>A FAST-ED score greater than or equal to 4 indicates a high likelihood of LVO stroke</b>	<b>Total Score</b>



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## Special Study Protocol

This special study protocol will only be utilized by the participating LSAs.

### Pre-Medical Control

#### **MFR/EMT/SPECIALIST/PARAMEDIC**

1. Assure the scene is safe.
2. Complete a Primary Patient Survey per **Patient Assessment Protocol, 5-21**.
  - a. Assess airway, breathing, and circulation.
3. If the patient presents with a new onset neurological complaint, screen for stroke by completing the first three steps of FAST-ED:
  - a. **Facial Palsy:** Check for facial weakness by asking the patient to show you their teeth or smile.
  - b. **Arm Weakness:** Check for arm weakness by asking the patient to extend both arms with palms up out in front of them, close their eyes, and hold them there for a count of 10.
  - c. **Speech Changes:**
    - i. Dysarthria: Check for slurred speech or an inability to speak by asking the patient to repeat a simple phrase, for example, "The sky is blue in Michigan."
    - ii. Aphasia:
      1. Check for expressive aphasia: Ask the patient to name 3 common items.
      2. Check for receptive aphasia: Ask the patient to perform a simple command. For example, ask the patient, can you show me two fingers?"

**Note:** If facial palsy, arm weakness, and speech changes indicative of stroke are absent, end the stroke assessment and continue with **Patient Assessment Protocol, 5-21**. If signs and symptoms of stroke are identified, score the severity of the deficit(s) noted according to the FAST-ED stroke severity scale and continue the stroke assessment by completing the remaining steps, listed below. Ensure you document all FAST-ED assessment scores, when applicable (see page 6).

- d. **Time:** If signs of stroke are present, assure you document the **date and time** that:
  - i. The patient was last-known-well.
  - ii. Signs and symptoms of stroke were first discovered.
- e. **Eye Deviation:** Check for gaze deviation to either side and rate the deficit, if present.
- f. **Denial/Neglect:** Only complete this step if the patient was able to answer questions and follow commands appropriately. Show the patient their weak arm and ask them:
  - i. "Do you feel weakness in this arm?"
  - ii. "Whose arm is this? Is this your arm?"
- g. **Total the FAST-ED score. A total score of  $\geq 4$  indicates a high likelihood of LVO stroke.**
4. Establish a differential diagnosis of stroke by attempting to rule out stroke mimics.
  - a. Common stroke mimics include:
    - i. Hypoglycemia, if blood glucose less than 60 mg/dL treat per **Altered Mental Status Protocol, 1-3**
    - ii. Todd's paralysis following a seizure. If seizure, follow **Seizure Protocol, 1-16**
    - iii. Drug and/or ETOH intoxication
    - iv. Migraines
    - v. Infection
5. **All stroke patients with a new onset of stroke signs and symptoms of  $\leq 24$  hours are Priority 1 patients! Keep on scene time to a minimum, ideally  $< 10$  minutes.**
  - a. Limit on-scene treatment to critical interventions only.
  - b. If stroke is suspected, position patient supine to support collateral blood flow.
  - c. Use minimum O<sub>2</sub> necessary to maintain SPO<sub>2</sub> of  $\geq 94\%$ .
6. Obtain baseline vital signs per **Patient Assessment Protocol, 5-21**.
7. Obtain a SAMPLE history, including:
  - a. Blood thinner medication usage. Document the name of the medication and the date and time of the patient's last dose.
  - b. Identify if the patient possesses predisposing risk factors for stroke, including:
    - i. Atrial fibrillation, hypertension, coronary artery disease, diabetes, history of smoking.



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#### **EMT/SPECIALIST/PARAMEDIC**

8. Provide a “**STROKE ALERT**” as soon as possible once a differential diagnosis of stroke is established. Pre-hospital notification will include:
  - a. Clearly state, “**STROKE ALERT**”, when contacting the receiving hospital and provide the following information:
    - i. FAST-ED score and list the neuro deficits identified.
    - ii. Last-known-well date and time.
      1. The date and time at which the patient was last known to be without the signs and symptoms of the current stroke or at his or her prior baseline.
    - iii. Date and time of symptom discovery.
    - iv. Blood thinner usage:
      1. Include name of medication and date/time of last dosage, if available.
    - v. Vital signs
    - vi. Estimated time of arrival (ETA)

#### **PARAMEDIC**

9. 12-lead ECG and IV access should be obtained during transport to the hospital. Preferably, at least one 18-gauge catheter should be placed in the left or right AC.

#### **Notes:**

##### **Signs and symptoms of stroke include:**

- Hemiparesis (weakness on one side of the body), or hemiplegia (paralysis on one side of the body)
- Facial droop
- Dizziness, vertigo, or syncope
- Expressive aphasia (loss of the ability to produce written or spoken language)
- Receptive aphasia (loss of ability to understand written or spoken language)
- Hemi spatial inattention (inability to respond to stimuli on one side of the body, usually the left side)
  - Anosognosia (an inability to recognize weakness on one side)
  - Asomatognosia (loss of recognition or awareness of part of the body)
- Dysarthria (slurred speech)
- Altered LOC or seizures
- Sudden severe headache with no known cause
- Visual disturbances
- Generalized weakness
- Frequent or unexplained falls

##### **Blood thinners of concern include:**

- Coumadin/Warfarin
- Pradaxa/Dabigatran
- Eliquis/Apixaban
- Xarelto/Rivaroxaban
- Savaysa/Edoxaban
- Heparin/Enoxaparin

##### **Patient Care Report:**

Assure the following key elements are documented in your PCR:

- Stroke severity scale score and deficits noted.
- Last known well date and time.
- Date and time of sign and symptom discovery.
- Blood thinner medication name, as well as the date and time of last dosage.
- Next of kin information (name and phone), if available.

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### Special Study Data Reporting Requirements

Each time a participating LSA transports a patient with a differential diagnosis of stroke, a "LSA Stroke Notification Form" must be submitted to the OCMCA along with a copy of the PCR and the FAST-ED Stroke Severity Scale Scoring Checklist within 72 hours.

Use the table below to document all FAST-ED assessment scores, when applicable

OAKLAND COUNTY MEDICAL CONTROL AUTHORITY		OCMCA FAST-ED Stroke Severity Scale Scoring Checklist			
Patient Name:		DOB: / /			
Last-known-well date and time:		/ / @ :			
Symptom discovery date and time:		/ / @ :			
Assessment Items		Score			
<b>Facial Palsy</b> – Ask the patient to show their teeth or smile.					
1. Both sides of the face move equally or not at all.		0			
2. One side of the face droops or is clearly asymmetric.		1			
<b>Arm Weakness</b> – Ask the patient to extend both arms with palms up out in front of them, close their eyes, and hold them there for a count of 10.					
1. Both arms remain up for >10 seconds or slowly move down equally.		0			
2. Patient can raise arms but one arm drifts down in <10 seconds.		1			
3. One or both arms fall rapidly, cannot be lifted, or no movement occurs at all.		2			
<b>Speech Changes</b>					
<b>Dysarthria</b> – Ask the patient to repeat the phrase: "The sky is blue in Michigan."					
Is slurred speech present? (circle one)		Yes	No		
<b>Expressive Aphasia</b> – Ask the patient to name 3 common items.					
1. Names 2 to 3 items correctly.		0			
2. Names only 0 - 1 items correctly.		1			
<b>Receptive Aphasia</b> – Ask the patient to perform a simple command. Example: Ask the patient, "show me two fingers."					
1. Normal, patient can follow the simple command.		0			
2. Unable to follow the simple command.		1			
<b>Eye Deviation</b>					
1. No deviation, eyes move equally to both sides.		0			
2. Patient has clear difficulty when looking to one side (left or right).		1			
3. Eyes are deviated to one side and do not move to the other side.		2			
<b>Denial/Neglect</b> – (Do not perform if expressive or receptive aphasia is present)					
<b>Anosognosia</b> – Show the patient their affected arm and ask, "Do you feel weakness in this arm?"					
1. Patient recognizes the weakness in their weak arm.		0			
2. Patient does NOT recognize the weakness in their weak arm.		1			
<b>Asomatognosia</b> – Show the patient their affected arm and ask, "Whose arm is this?"					
1. Patient recognizes their weak arm.		0			
2. Patient does NOT recognize their weak arm.		1			
A FAST-ED score greater than or equal to 4 indicates a high likelihood of LVO stroke		<b>Total Score</b>			
Does the patient have a previous history of stroke? (circle one):		Yes	No		
Anticoagulant Medication Use				Vital Signs	
Anticoagulants	No	Yes	If yes, document the date and time of last dose, if available		Time
Coumadin/Warfarin			Date: / /	Time: :	
Pradaxa/Dabigatran			Date: / /	Time: :	
Eliquis/Apixaban			Date: / /	Time: :	
Xarelto/Rivaroxaban			Date: / /	Time: :	
Savaysa/Edoxaban			Date: / /	Time: :	
Heparin/Enoxaparin			Date: / /	Time: :	
Other anticoagulant:			Date: / /	Time: :	
<input type="checkbox"/> Unable to obtain a list of medications for this patient					
Next of kin information					
Name		Relationship		Phone number	

Notes:

Stroke Patient Transported by Bloomfield Twp. Fire Department	
Patient name:	DOB: / /
Address:	

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## **EMS Special Study Education Overview**

All EMS stroke special study education will be facilitated by OCMCA appointed instructors. All EMS providers at each participating LSA will receive a total of six hours of education consisting of three hours of lecture and three hours of practical skill education. Based on feedback from the participating LSAs, the education modules have been divided into three learning sessions that will be two hours in length each. Below you will find the lesson plans for each learning session.

### **EMS Stroke Special Study – Training Module 1 of 3**

**Credit Category:** Medical

**Credits:** MFR: 2L EMT: 2L SPEC: 2L EMT-P: 2L

**Format:** Lecture

**Presenter:** OCMCA appointed instructors

**Date:** TBD

**Time Duration:** 2.0 hours

**CE Description:** The purpose of this EMS continuing education (CE) session is to improve pre-hospital stroke recognition, treatment, and transport. This CE session will strengthen the EMS provider's understanding of the various stroke syndromes, stroke mimics, and best practices in stroke care with an emphasis on recognition of large vessel occlusion (LVO) strokes. In addition, this CE session will present current stroke study data, the latest AHA guidelines, and discuss stroke center designations and their diagnostic, as well as treatment capabilities.

**Rationale:** This course lays the groundwork for EMS providers to understand and differentiate between different stroke syndromes. Pre-hospital recognition of LVO strokes can expedite critical patient care once the patient arrives at a stroke center. In the presence of an LVO, it is estimated that nearly 2 million neurons are lost every minute until reperfusion occurs. In light of the latest science, EMS personnel should strive to do more than just identify that a stroke is taking place. Identifying a high probability of LVO in the field based on the severity of the stroke patient's signs and symptoms, and providing early notification to the receiving stroke center is now possible with the development of stroke severity tools designed specifically for field use. Early notification to the receiving stroke center may expedite critical reperfusion therapies, further enhancing the patient's odds of a good outcome. However, before EMS personnel begin to utilize severity-based stroke assessment scales they should possess an enhanced understanding of stroke, including; the various stroke types, brain anatomy and physiology, and stroke mimics.

#### **Objectives:**

- Appreciate what is at stake for stroke patients.
- Differentiate between different stroke types.
- Identify and describe the various stroke syndromes based on stroke assessment findings.
- List and describe data and study findings that support key changes to the 2015 AHA Stroke Guidelines.
- Identify and describe the various Stroke Center treatment options for stroke patients.
- Compare and contrast Primary and Comprehensive Stroke Centers.
- Describe the role of EMS and their impact on functional outcomes for stroke patients.
- Define and describe LVO stroke.
- Appreciate the impact EMS can have on recognizing LVOs.



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## **EMS Stroke Special Study – Training Module 1 of 3 Outline**

- 1. Introduction**
- 2. A History of Stroke, “The Evolution of Stroke Recognition and Treatment”**
- 3. Appreciate what is at stake for stroke patients**
  - a. Neurological impact of stroke over time
  - b. Differentiate between different stroke types
  - c. List and describe data and study findings that support key changes to the 2015 AHA Stroke Guidelines.
- 4. Identify and describe the various stroke center treatment options**
  - a. Recombinant tissue plasminogen activator (rtPA)
  - b. Endovascular therapy (EVT)
- 5. Compare and contrast Primary Stroke Center (PSC) and Comprehensive Stroke Center (CSC)**
  - a. Primary Stroke Center (PSC)
  - b. Comprehensive Stroke Center (CSC)
- 6. Appreciate the impact EMS can have on patient outcomes through field recognition of LVOs**
  - a. Swiss cheese model of accident causation
- 7. Describe how EMS can contribute to positive functional outcomes for stroke patients**
  - a. Time management
    - i. During Transport
    - ii. On scene
- 8. Documentation**
  - a. Patient care report (PCR)
  - b. Special study pre-hospital data reporting
- 9. Conclusion**
  - a. Summary
  - b. Questions and answer session, as needed



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## **Special Study Education Overview (cont.)**

### **EMS Stroke Special Study – Training Module 2 of 3**

**Credit Category:** Medical

**Credits:** MFR: 1L/1P EMT: 1L/1P SPEC: 1L/1P EMT-P: 1L/1P

**Format:** 1-Hour Lecture/ 1-Hour Practical

**Presenter:** OCMCA appointed instructors

**Date:** TBD

**Time Duration:** 2.0 hours

**CE Description:** The purpose of this EMS continuing education (CE) session is to introduce EMS providers to FAST-ED as a dual-purpose stroke screening and stroke severity assessment tool. This CE session will provide EMS providers with an in-depth understanding of the assessment steps associated with FAST-ED and how to apply them. In addition, this CE session will include an explanation of the stroke pilot study protocol, the data reporting process, and the FAST-ED Scoring Checklist that will be utilized to tabulate stroke patient FAST-ED scores. This CE session will conclude with a FAST-ED demonstration and practical skill session utilizing the FAST-ED scoring checklist to complete a stroke assessment on simulated patients with an acute onset of stroke symptoms.

**Rationale:** Pre-hospital recognition of LVO strokes can expedite critical patient care once the patient arrives at a stroke center. In the presence of an LVO, it is estimated that nearly 2 million neurons are lost every minute until reperfusion occurs. In light of the latest science, EMS personnel should strive to do more than just identify that a stroke is taking place. Identifying a high probability of LVO in the field based on the severity of the stroke patient's signs and symptoms, and providing early notification to the receiving stroke center is now possible with the development of stroke severity tools designed specifically for field use. Early notification to the receiving stroke center may expedite critical reperfusion therapies, further enhancing the patient's odds of a good outcome. However, in order to be proficient with the use of FAST-ED providers must gain a working understanding of the scale and its reference material through scenario-based practice and repetition on simulated patients.

#### **Objectives:**

- List and describe the elements of FAST-ED and how to apply them to potential stroke patients in the pre-hospital setting.
- List, describe and prioritize treatments for stroke patients in the pre-hospital setting.
- List and describe all criteria found in the special study Stroke Protocol.
- Identify the key findings to communicate to a receiving stroke center when transporting a potential stroke patient.
- List and describe key information to include in the patient care record (PCR) of a potential stroke patient.
- Appreciate the importance of assuring the hospital receives a copy of the PCR for all potential stroke patients.



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## EMS Stroke Special Study – Training Module 2 of 3 Outline

1. Introduction
2. List and describe the elements of FAST-ED and how to apply them to potential stroke patients in the pre-hospital setting.
  - a. Overview of FAST-ED
    - i. App feature
    - ii. Combines stroke screening and severity tool
  - b. How to use FAST-ED as a stroke-screening tool
  - c. How to use FAST-ED as a stroke severity tool after signs and symptoms of stroke are detected.
  - d. OCMCA FAST-ED Scoring Checklist
3. List, describe and prioritize treatments for stroke patients in the pre-hospital setting.
  - a. On-scene treatments
    - i. Positioning
  - b. En route treatments
    - i. IV
    - ii. 12-Lead ECG
4. List and describe all criteria found in the special study stroke protocol.
  - a. Special study stroke protocol overview
    - i. Scene safety
    - ii. Primary assessment
    - iii. FAST-ED stroke screen
    - iv. FAST-ED stroke severity scale.
    - v. Determine LKW date/time, and date/time of sign/symptom discovery
    - vi. Establish a differential diagnosis of stroke by attempting to rule out stroke mimics
    - vii. Limit on scene treatments
    - viii. Obtain baseline vital signs
    - ix. Obtain SAMPLE history:
  - b. Provide a "Stroke Alert" to the receiving stroke center.
    - i. Include essential pre-arrival information in the radio report
  - c. Patient care records should include the following key elements:
    - i. Stroke severity scale score and deficits noted
    - ii. LKW date and time
    - iii. Date and time of sign and symptom discovery
    - iv. Blood thinner medication name and date/time of last dose
    - v. Next of kin information, if available
  - d. Special study reporting requirements
    - i. Criteria for stroke notification form submission to OCMCA
    - ii. How to complete a LSA Stroke Notification Form
5. Appreciate the importance of assuring the hospital receives a copy of the PCR for all potential stroke patients.
  - a. The EMS PCR is a reference for ED and neuro staff when formulating treatment decisions
  - b. The PCR must be immediately available to the hospital, per protocol
  - c. The OCMCA FAST-ED Scoring Checklist should be provided to the ED staff for reference
6. Demonstrate FAST-ED with the use of the OCMCA FAST-ED Scoring Checklist.
  - a. FAST-ED:
    - i. Practice
    - ii. Skill verification and remediation
7. Conclusion
  - a. Summary
  - b. Questions and answer session, as needed



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## **Special Study Education Overview (cont.)**

### **EMS Stroke Special Study – Training Module 3 of 3**

**Credit Category:** Medical

**Credits:** MFR: 2P EMT: 2P SPEC: 2P EMT-P: 2P

**Format:** Practical

**Presenter:** OCMCA appointed instructors

**Date:** TBD

**Time Duration:** 2.0 hours

**CE Description:** The purpose of this EMS continuing education (CE) session is to provide EMS providers an opportunity to apply the FAST-ED stroke severity scale, and the Special Study Stroke Protocol during a scenario involving simulated patients who present with an acute onset neurological complaint. The course will offer EMS providers an opportunity to apply all aspects of the Special Study Stroke Protocol from initial patient contact, to pre-arrival “Stroke Alert” notification, and hospital arrival.

**Rationale:** Pre-hospital recognition of LVO strokes can expedite critical patient care once the patient arrives at a stroke center. In the presence of an LVO, it is estimated that nearly 2 million neurons are lost every minute until reperfusion occurs. In light of the latest science, EMS personnel should strive to do more than just identify that a stroke is taking place. Identifying a high probability of LVO in the field based on the severity of the stroke patient’s signs and symptoms, and providing early notification to the receiving stroke center is now possible thanks to the development of stroke severity tools designed specifically for field use. Early notification to the receiving stroke center may expedite critical reperfusion therapies, further enhancing the patient’s odds of a good outcome. However, in order to be proficient in the application of FAST-ED, and the Special Study Stroke Protocol, providers must gain a working understanding of them through scenario-based practice and repetition on simulated patients.

### **EMS Stroke Special Study – Training Module 3 of 3 Outline**

- 1. Introduction**
  - a. Present an overview of the course objectives
  - b. Describe course format
- 2. Small group, scenario based practice responding to simulated stroke patients.**
- 3. Special study stroke protocol and FAST-ED practical skill testing and remediation.**
- 4. Conclusion**
  - a. Summary
  - b. Questions and answer session, as needed



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### **Hospital Special Study Education Overview**

SJMO and BHRO will receive training regarding FAST-ED scores and field "STROKE ALERTS". Education resources will be produced by the OCMCA and provided to the participating hospitals to facilitate this knowledge and information.

### **Special Study Skill and Knowledge Verification Process**

The OCMCA will verify that all BTFD EMS personnel have completed the necessary skill and knowledge education objectives.

### **Special Study Knowledge Assessment**

Following the completion of the education each EMS provider will be required to complete a stroke special study knowledge assessment on the Knowledge Assessment Platform (KAP).



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### **Special Study Data Collection**

Each time a participating LSA transports a patient with a differential diagnosis of stroke, a "LSA Stroke Notification Form" (found below) must be submitted to the OCMCA along with a copy of the PCR and the FAST-ED Stroke Severity Scale Scoring Checklist within 72 hours.

#### **Stroke Special Study: LSA Stroke Notification Form**

LSA:  Bloomfield Twp. FD



Incident date: \_\_\_\_\_

Incident #: \_\_\_\_\_

Patient name: \_\_\_\_\_ DOB: \_\_\_\_\_

Receiving hospital:  St. Joseph Mercy Oakland  Beaumont Hospital Royal Oak

#### Incident Response Times

- Scene arrival: \_\_\_\_\_
- Scene departure: \_\_\_\_\_
- Hospital arrival: \_\_\_\_\_

#### Patient Data

- Last-known-well date and time: \_\_\_\_\_
- Symptoms discovery date and time: \_\_\_\_\_
- FAST-ED score (0-9): \_\_\_\_\_

**Please submit the required documentation listed below within 72 hours following a field impression of stroke.**

Email: [qi@ocmca.org](mailto:qi@ocmca.org) or Fax: 248- 975-9723

#### Required Documentation:

- PCR
- FAST-ED Stroke Severity Scale Scoring Checklist
- LSA Stroke Notification Form

Name of person submitting: \_\_\_\_\_ Date: \_\_\_\_\_



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**Special Study Data Collection (cont.)**

After the OCMCA receives the LSA Stroke Notification Form, the OCMCA will follow up with the receiving hospital and request specific data elements as outlined in the OCMCA Hospital Data Collection Form, found below.

**Stroke Special Study: OCMCA Hospital Data Collection Form**

Patient name: \_\_\_\_\_ DOB: \_\_\_\_\_ Gender: M or F

Receiving hospital:  St. Joseph Mercy Oakland  Beaumont Hospital Royal Oak

Date and time of hospital arrival: \_\_\_\_\_

**Please indicate which of the following best describe the patient's diagnosis:**

- TIA
- Small vessel stroke
- LVO stroke (Intracranial ICA, MCA-M1, MCA-M2, Basilar)  
 If LVO, please indicate the cerebral arteries affected: \_\_\_\_\_
- Hemorrhagic stroke
- Prehospital false positive for stroke  
 If prehospital false positive for stroke, please indicate the cause of the patient's signs and symptoms, if known:  
 \_\_\_\_\_  
 \_\_\_\_\_
- Other (specify): \_\_\_\_\_

Test/Procedure	Completed ("Y" or "N")	Door to Test/Procedure Time
NIHSS		
CT		
CTA		
tPA		
Mechanical Thrombectomy		
Transferred to another facility		
Other (specify): _____		

**Please complete and submit this form via email or fax, within 7 business days of receiving request. Email: [qi@ocmca.org](mailto:qi@ocmca.org) or Fax: 248- 975-9723**

Name of person submitting: \_\_\_\_\_ Date: \_\_\_\_\_



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### OCMCA Stroke Special Study Participation Agreement

By signing below, you agree on behalf of your agency/hospital to comply with the terms of the OCMCA Stroke Special Study. Failure to comply may result in removal from the study. Participation in the OCMCA's Stroke Special Study is contingent on agreeing to the following agency/hospital requirements:

- Data submission will occur within the specified time frame as outlined on the OCMCA data notification/collection forms.

CW  
Initial

- All data, as outlined on the OCMCA data collection/submission forms, is required and will be submitted to the OCMCA.

CW  
Initial

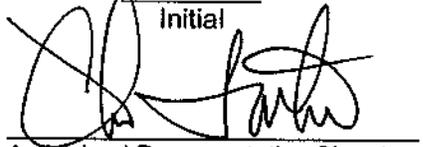
- All education as required by the OCMCA will be completed.

CW  
Initial

- An agency/hospital will designate both a primary and secondary point of contact for the stroke special study. These individuals will be responsible for managing and facilitating all communication between their agency/hospital and the OCMCA related to the stroke special study including; internal or external issues and challenges related to the study, data collection/submission, etc.

CW  
Initial

- If an agency/hospital wishes to cease participation in the stroke special study at anytime, a formal written notice will be provided 30 days in advance.

CW  
Initial  
  
Authorized Representative Signature

Bloomfield Twp. Fire Dept.  
Agency/Hospital

9/6/2017  
Date

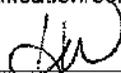


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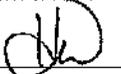
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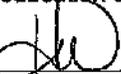
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Initial

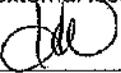
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Initial

- All education as required by the OCMCA will be completed.

  
Initial

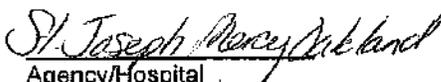
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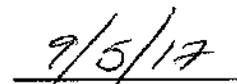
  
Initial

- If an agency/hospital wishes to cease participation in the stroke special study at anytime, a formal written notice will be provided 30 days in advance.

  
Initial

  
Authorized Representative Signature

  
Agency/Hospital

  
Date



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MF  
Initial

- All data, as outlined on the OCMCA data collection/submission forms, is required and will be submitted to the OCMCA.

MF  
Initial

- All education as required by the OCMCA will be completed.

MF  
Initial

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MF  
Initial

- If an agency/hospital wishes to cease participation in the stroke special study at anytime, a formal written notice will be provided 30 days in advance.

MF  
Initial

Michael Farrow  
Authorized Representative Signature

Beaumont Health RO  
Agency/Hospital

9/08/17  
Date