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Altered Mental Status

The purpose of this protocol is to provide for the assessment and treatment of patients with altered mental status. Consideration should be given to treatable and reversible causes (e.g., hypoglycemia, opioid overdose, etc.). For patients ≤ 14 years of age refer to **4.4 Pediatric Altered Mental Status-Treatment Protocol.**

1. Follow **1.1 General Pre-hospital Care Protocol-Treatment Protocol**.
2. If patient is not alert or vital signs are abnormal:
    a. Evaluate and maintain airway, provide oxygenation, and support ventilations as needed per **7.9 Airway Management-Procedure Protocol**.
    b. If no suspected spinal injury, place the patient in recovery position.
3. If respiratory depression is present due to suspected opioid overdose, administer **naloxone** per **1.9 Opioid Overdose Treatment and Prevention-Treatment Protocol**.
4. Restrain patient, if necessary, refer to **7.16 Patient Restraint-Procedure Protocol**.
5. For a known diabetic, consider small amounts of **oral glucose** if unable to measure blood glucose level.
6. If the patient is demonstrating signs of hypoglycemia, refer to **1.100 Diabetic Emergencies.**
7. Consider 12 Lead ECG (Per MCA selection, may be a BLS or Specialist procedure) follow **7.1 12 Lead ECG-Procedure Protocol**.
8. If the patient is not alert and the cause is not immediately known contact Medical Control and consider:

A – Alcohol	T – Trauma	C – Cardiac
E – Epilepsy	I – Ingestion	H – Hypoxia
I – Insulin	P – Psych	E – Environmental
O – Overdose	P – Phenothiazine	S – Stroke
U – Uremia	S – Salicylates	S - Sepsis

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Stroke or Suspected Stroke Protocol

1. Follow **1-1 General Pre-Hospital Care Protocol.**

2. **Stroke Screen:** If the patient presents with a new onset neurological complaint, utilize the Cincinnati Pre-hospital Stroke Scale (CPSS) to screen for stroke. *Any deficit in the CPSS is considered positive for stroke.*
   A. **Facial palsy**: Ask the patient to show you their teeth or smile.
   B. **Arm weakness**: 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.
   C. **Speech changes**: Check for slurred speech or an inability to speak or understand speech by asking the patient to repeat a simple phrase.

If the CPSS is negative and ***ALL* stroke signs or symptoms (e.g. visual changes, single limb weakness, confused speech, etc.) are ABSENT**
continue to the appropriate patient care protocol.

3. **Time**: If signs of stroke are present, identify and document the **date and time**:
   A. The patient was **last known well.**
   B. **Signs and symptoms of stroke** were first discovered.

4. Calculate a FAST-ED score using the **OCMCA FAST-ED Stroke Severity Scale Checklist** (see page 3)

5. **Stroke mimics:**
   Identify possible stroke mimics, including, but not limited to:
   - Hypoglycemia, if blood glucose less than 60 mg/dL treat for hypoglycemia.
   - Todd's paralysis following a seizure. If seizure, follow **3.4 Seizure Protocol.**
   - Drug and/or ETOH intoxication
   - Migraines
   - Infection

6. **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. **Stroke risk factors**: Identify if the patient possesses predisposing stroke risk factors.

7. **Treatment**
   A. **On-scene treatments.**
      i. Keep on scene time to <15 minutes.
      ii. Limit on-scene treatment to critical interventions only.
      iii. If stroke is suspected, position patient supine to support collateral blood flow.

iv. Use minimum O2 necessary to maintain SPO2 of ≥94%.

B. Transport per the **8.3 Transportation Protocol and 8.3.1 OCMCA Hospital Transportation Matrix**
   i. Patients with a FAST-ED score of ≥4 transport to a Level 1 – Comprehensive or Level 2 – Thrombectomy Capable Hospital.

C. **Treatments during transport.**
   i. Initiate vascular access but **DO NOT delay scene time for IV.** Preferred IV is 18-gauge catheter in an AC vein.
   ii. 12-lead ECG. **DO NOT delay scene time to obtain a 12-lead ECG.**

8. STROKE ALERT

A. **Verbal report or e-Bridge notification.** Provide a verbal or eBridge "**STROKE ALERT,**" per **8.12 Communications with Emergency Facilities Protocol**, to the receiving hospital as soon as possible if patient has any stroke symptom that was or is currently present and/or sudden onset of dizziness. All stroke alerts should include the following:
   i. FAST-ED score and list the neuro deficits identified.
   ii. Last known well date and time.
   iii. Date and time of symptom discovery.
   iv. Blood thinner usage. Include name of medication and date/time of last dosage, if available.
   v. Vital signs.
   vi. Any possible stroke mimic present.
   vii. Estimated time of arrival (ETA).
   viii. It is recommended to video record the stroke assessment/deficits and send to the receiving stroke center per an OCMCA approved application.

9. Patient Care Report

Document the following elements in your PCR in the appropriate locations:

- FAST-ED 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.
- Blood Glucose level.

OCMCA FAST-ED Stroke Severity Scale Checklist (FAST-ED LSAs only)	
Facial Palsy – 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**
Arm Weakness – 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**
Speech Changes	
Expressive Aphasia – Ask the patient to name 3 common items.	
1. Names 2 to 3 items correctly.	**0**
2. Names only 0 - 1 items correctly.	**1**
Receptive Aphasia – 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**
Eye Deviation	
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**
Denial/Neglect – (Do not perform if expressive or receptive aphasia is present)	
Anosognosia – 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**
Asomatognosia – 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 ≥ 4 indicates a high likelihood of a severe stroke	**Total Score** ***(0-9)***

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Respiratory Distress

For patients < 14 years of age refer to **4.5 Pediatric Respiratory Distress-Treatment Protocol**.

1. Follow **1.1 General Pre-hospital Care-Treatment Protocol.**
2. Allow patient a position of comfort.
3. Determine the type of respiratory problem involved.
4. Refer to the **7.24 End Tidal Carbon Dioxide Monitoring** protocol.

CLEAR BREATH SOUNDS:

1. Possible metabolic problems, MI, pulmonary embolus, hyperventilation.
2. Obtain 12-lead ECG (Per MCA selection, may be a BLS or Specialist procedure) follow **7.1 12 Lead ECG-Procedure Protocol**.

ASYMMETRICAL BREATH SOUNDS:

1. If evidence of tension pneumothorax and patient unstable, consider decompression refer to **7.18 Pleural Decompression-Procedure Protocol.**

STRIDOR/UPPER AIRWAY OBSTRUCTION:

1. Complete Obstruction:
   A. Follow **1.10 Foreign Body Airway Obstruction-Treatment Protocol**.
2. Partial Obstruction: epiglottitis, foreign body, anaphylaxis, etc.
   A. Follow **7.9 Airway Management-Procedure Protocol**.
   B. Consider anaphylaxis see **1.6 Anaphylaxis/Allergic Reaction-Treatment Protocol**.
   C. Transport in position of comfort.

RHONCHI (SUSPECTED PNEUMONIA):

1. Sit patient upright.
2. Consider CPAP per **7.5 CPAP-Procedure Protocol.**
3. Consider **NS** or **LR** IV/IO fluid bolus up to 1 liter, wide open if tachycardia, repeat as needed per **7.23 Vascular Access and IV Fluid Therapy-Procedure Protocol.**

CRACKLES:

1. Crackles of suspected cardiac etiology/CHF/cardiogenic shock refer to **5.4 Pulmonary Edema/Cardiogenic Shock-Treatment Protocol**.
2. Crackles of suspected non cardiac etiology/fluid – follow wheezing, diminished breath sound below.

WHEEZING, DIMINISHED BREATH SOUNDS (ASTHMA, COPD):

EMT	PARAMEDIC
1. Assist the patient in using their own **albuterol** Inhaler, if available a. Administer **albuterol** 2.5 mg/3mL NS nebulized (Per MCA selection may be EMT skill) per **9.1 Medication Administration-Medication Protocol. May repeat one time.** Nebulized **albuterol** administration per MCA selection ☒ EMT	1. Administer nebulized **albuterol** 2.5 mg/3 mL **NS** nebulized and **Ipratropium** 500 mcg/2.5 mL **NS** if wheezing and/or airway constriction per **9.1 Medication Administration-Medication Protocol** (Per MCA selection may be Specialist skill) Nebulized **albuterol/ipratropium** administration per MCA selection ☒ Specialist 2. Administer **albuterol** 2.5 mg/3mL NS nebulized for ongoing wheezing after albuterol/ipratropium 3. Continue **albuterol** 2.5 mg/3mL NS nebulized every 10 minutes for continued wheezing 4. Administer prednisone tablet 50 mg PO to adults and children > 6 years of age (if available per MCA selection) Additional Medication Option: ☒ **Prednisone** 50 mg tablet PO (Adults and Children > 6 y/o) i. If **prednisone** is not available, patient is ≤ 6 years of age, or patient is unable to receive medication PO, administer **methylprednisolone** IV/IO/IM: a. Adults: 125 mg b. Pediatrics: 2mg/kg (max 125 mg)

1. Consider CPAP per **7.5 CPAP-Procedure Protocol**.
2. Administer epinephrine auto-injector (0.3 mg) in patients with impending respiratory failure and unable to tolerate nebulizer therapy~~.~~

MCA Approval of **epinephrine** auto-injector IM
☒ MFR

MCAs will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS.

3. Administer **epinephrine** 1 mg/mL, 0.3 mg (0.3 mL) IM in patients with impending respiratory failure unable to tolerate nebulizer therapy (per MCA selection may be BLS or MFR skill).

NOTE: BLS not carrying epinephrine auto-injector MUST participate in draw up epinephrine.

MCA Approval of draw up **epinephrine.**
☒ MFR
☒ BLS
Personnel must complete MCA approved training prior to participating in draw up **epinephrine.**

MCAs will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS.

4. Contact medical control and consider repeat **epinephrine** 1mg/mL, 0.3 mg (0.3 mL) IM in asthma patients with impending respiratory failure if unable to tolerate nebulizer therapy.
5. Consider **magnesium sulfate** 2gms slow IV in refractory status asthmaticus. Administration of **magnesium sulfate** is best accomplished by adding **magnesium sulfate** 2gm to 100 to 250 mL of **NS** and infusing over approximately 10 minutes.

Protocol Source/Reference: Michigan 3.3 Respiratory Distress; Version 8/11/23

Seizures

For patients ≤ 14 years of age refer to **4.7 Pediatric Seizure-Treatment Protocol**

1. Follow **1.1 General Pre-hospital Care-Treatment Protocol**.
2. IF PATIENT IS ACTIVELY SEIZING:
   - A. Protect patient from injury.
   - B. Do not force anything between teeth.
   - C. Pregnant women 20 weeks gestation up to 6 weeks post birth WITHOUT a seizure disorder history treat as eclampsia, see **Magnesium Sulfate** administration below (C.)
   - D. Administer **midazolam** 10 mg IM prior to IV start
3. Check blood glucose (may be MFR skill, see **7.23 Blood Glucose Testing-Procedure Protocol**),
   - A. If blood glucose is found to be less than 60 mg/dL or hypoglycemia is suspected administer **dextrose** 25 gm IV per **1.100 Diabetic Emergencies.**
   - B. If patient is pregnant (eclampsia)
     a. Administer **magnesium sulfate** 4 gm over 10 minutes IV/IO until seizure stops**.** Administration of **magnesium sulfate** is best accomplished by adding **magnesium sulfate** 4 gm to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
     b. If eclamptic seizure does not stop after magnesium, then administer benzodiazepine as specified below.
   - C. If IV already established and **midazolam** IM/IN has not been administered, administer **midazolam** 5 mg IV/IO
   - D. If seizures persist
     a. Repeat **midazolam** 5mg IV/IO/IM/IN
     b. Contact Medical Control
4. IF PATIENT IS NOT ACTIVELY SEIZING and has/is:
   - A. Altered level of consciousness, refer to **3.1 Altered Mental Status-Treatment Protocol.**
   - B. Alert
     a. Monitor for changes.
     b. Obtain vascular access see **7.23 Vascular Access & IV Fluid Therapy.**
     c. Check blood glucose (may be MFR skill, see **7.21 Blood Glucose Testing-Procedure Protocol**),

Protocol Source/References: NAEMSO Clinical Guidelines

Sepsis

It is the purpose of this protocol to recognize and treat sepsis early to promote optimal care and survival of patients who may be septic. This protocol applies to patients >14 years of age with a clinical suspicion of systemic infection who have 2 or more of the inclusion criteria. These patients are defined as meeting criteria for suspicion of sepsis and should be evaluated and treated per this protocol.

INCLUSION CRITERIA

1. Clinical suspicion of systemic infection, and two or more of the following:
   A. Hyperthermia temp >38^{o} C (100.4 F)
   B. Hypothermia temp<36^{o} C (96.8 F)
   C. Heart rate >90bpm
   D. Respiratory rate <10 or >20 per minute
   E. SBP <90 mmHg or evidence of hypoperfusion

Treatment

1. Follow **1.1 General Pre-Hospital Care-Treatment** Protocol.
2. Place patient in supine position.
3. Start large bore IV catheter per **7.23 Vascular Access and IV Fluid Therapy-Procedure Protocol**.
   a. Start second large bore IV catheter, if time permits.
4. Place on cardiac monitor and treat rhythm according to appropriate protocol.
5. Place on continuous pulse oximetry.
6. Check blood glucose (may be MFR skill, see **7.21 Blood Glucose Testing-Procedure Protocol**
7. If the patient meets inclusion criteria, administer a **NS** or **LR** IV/IO fluid bolus up to 1 liter, wide open. Reassess the patient, repeat boluses to a maximum of 2 L **NS** or **LR** as long as vital sign abnormalities persist.
   A. Monitor for pulmonary edema.
   B. If pulmonary edema presents, stop fluids, and contact Medical Control for direction.
8. If hypotension persists, refer to **1.5 Shock-Treatment Protocol**.
9. Monitor ETCO2 level (see **7.24 End Tidal Carbon Dioxide Monitoring-Procedure Protocol**) and report levels outside of normal range (35-45 mm Hg) to the receiving facility as soon as possible

Protocol Source/Reference: Michigan 3.5 Sepsis; Version 5/30/23.

Hyperactive Delirium Syndrome with Severe Agitation

Indications: Patient > 14 years of age who is an imminent physical threat to personnel and/or themselves and level of agitation is such that transport may place all parties at risk. Hyperactive delirium syndrome with severe agitation. is a life-threatening constellation of symptoms including, but not limited to, severe agitation and vital sign abnormalities (tachycardia, hyperthermia). These patients are usually an imminent physical threat to personnel and/or themselves.

Treatment

1. Ensure ALS response.
2. Follow **1.1 General Pre-hospital Care-Treatment Protocol**
3. Ensure appropriate personnel available to provide patient and provider safety. Refer to **7.16 Patient Restraint-Procedure Protocol.**
4. Obtain history, when possible, perform visual patient assessment, looking for cause of behavior (i.e., visible trauma, stroke symptoms, etc.). If an alternate cause of the behavior is likely, transition to the **3.1 Altered Mental Status-Treatment Protocol** or other applicable protocol.
5. For patients who are uncontrollably agitated despite de-escalation techniques, prepare for airway management, and administer per MCA selection:

Per MCA Selection
☐ **Ketamine** 4 mg/kg IM maximum single dose 500 mg (3-5 minute onset)
or
☒ **Midazolam** 10 mg IM/IN

6. Once adequate sedation is obtained:
   a. Continuously monitor SpO2
   b. Monitor and capnometry- **see 7.24 End Tidal Carbon Dioxide Monitoring-Procedure Protocol**.
   c. Obtain temperature.
      i. If hyperthermic (temp >38^{o} C or 100.4 F) provide cooling via ice packs to neck, axilla groin and/or fluids to skin while promoting evaporation (air movement).
   d. Establish IV per the **7.23 Vascular Access and IV Therapy-Procedure Protocol** and provide fluid bolus of up to 1 L of **NS** or **LR**. Reassess the patient, repeat boluses to a maximum of 2 L **NS** or **LR** as long as vital sign abnormalities persist.
      i. Monitor for pulmonary edema.
      ii. If pulmonary edema presents, stop fluids and contact Medical Control for direction.

e. Monitor EKG
f. Consider 12-lead if any evidence of hyperkalemia (peaked T waves, prolonged PR, widened QRS). 12 Lead (Per MCA selection, may be a BLS or Specialist procedure) follow **7.1 12 Lead ECG-Procedure Protocol**.

7. Continuously monitor patient, for potential need of airway management and treatment of hemodynamic compromise.
8. Contact medical control if additional sedation is required.

Medication References
Ketamine
Midazolam

Protocol Source/Reference: Michigan 3.6 Hyperactive Delirium Syndrome; Version 5/26/23.

Purpose: EMS frequently encounters patients that are critically ill and quickly deteriorating to the point of cardiac or respiratory arrest. Deterioration can often occur while packaging and loading these patients. It is important to rapidly recognize the deteriorating patient taking immediate action to stabilize the condition prior to loading and transporting. The following timeline provides a prioritization of the goal-directed treatments to stabilize the patient and prevent deterioration. For patients ≤ 14 years of age refer to **4.9 Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**.

1. Criteria
   a. Inclusion:
      i. Patient in whom cardiac or respiratory arrest appears imminent
      ii. Patient with provider impression of critical illness, including new onset altered mental status, airway compromise or severe respiratory distress/failure, and/or signs and symptoms of shock/poor perfusion.

   b. Exclusion:
      i. Life-threatening trauma that has not been corrected (i.e., exsanguination, pneumothorax, etc.)

2. Critical Actions (Initiate within first 5 minutes)
   a. Airway
      i. Insert Nasopharyngeal or Oropharyngeal Airway as indicated/tolerated if not following commands (GCS motor <6) or no response to verbal stimuli per the **7.9 Airway Management-Procedure Protocol**.
   b. Breathing
      i. If respiratory failure or distress, sit patient up if tolerated and not contraindicated by suspected spine injury.
      ii. Provide high-flow oxygen per the **7.12 Oxygen Administration-Procedure Protocol**.
      iii. If respirations are <10 per minute, ventilate by BVM at 15LPM. Two-person, two-handed technique is most effective and is highly recommended if the number of providers allows.
      iv. If respirations are >10 but inadequate, apply CPAP for respiratory distress/hypoxia per the **7.5 CPAP-Procedure Protocol.**
      v. Respirations may be assisted with BVM in sitting position if patient tolerates.
      vi. Consider PPV by BVM if not following commands or SpO2 <90%

c. Monitoring
   i. NIBP(cycle every 3 minutes)
   ii. SpO2
   iii. Continuous/waveform EtCO2
   iv. EKG

3. Immediate Actions (Initiate within first 10 minutes

a. Circulation
   i. Electrical Therapy (cardioversion or pacing) if dysrhythmia is primary cause of shock per the **7.8 Electrical Therapy-Procedure Protocol**
   ii. Emergent IV/IO access, per **7.23 Vascular Access & IV Therapy- Procedure Protocol**.
   iii. Administer **NS** or **LR** up to 1 liter bolus, infused under pressure
      1. Monitor for pulmonary edema.
      2. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
   iv. Consider push-dose **epinephrine** per the **1.5 Shock-Treatment Protocol.** Prepare **epinephrine** 10 mcg/mL by adding 1mL of 1mg/10mL **epinephrine** in 9mL **NS**, then
      1. Administer 10-20 mcg (1-2 mL **epinephrine** 10 mcg/mL) IV/IO
      2. Repeat every 3 to 5 minutes.
      3. Titrate SBP greater than 90 mmHg.

4. Actions within First 15 Minutes

a. Re-assess response to treatments.
b. Circulation
   i. Repeat fluid bolus up to 2-liter total, if indicated
   ii. If bradycardia, consider **atropine** 1 mg IV/IO, if indicated
   iii. Consider push-dose **epinephrine** per the **1.5 Shock-Treatment Protocol** while administering second fluid bolus.

5. Actions within First 20 Minutes

a. Re-assess response to treatments.
b. Circulation
   i. Continue fluids as indicated
   ii. Continue vasopressors (push-dose epinephrine) as indicated
   iii. Contact Medical Control for additional fluids/vasopressors.

c. Airway
i. Insert advanced airway, if indicated, per **7.9 Airway Management Procedure Protocol.**

6. Once critical and immediate actions have been completed**;** move the patient to ambulance for transport. Transport may be initiated earlier per provider discretion.

Notes:

1. The specific lengths of time listed are approximate to provide a sense of urgency and to prioritize actions. Provider safety is of utmost importance. Care for these patients should be given as quickly as possible, but safety considerations and the scene environment may lead to times that are longer than these stated goals. When conditions make it impossible to meet these goals, the reasons should be documented.

2. Actions listed should be simultaneous and not in any specific order. As critical actions are performed, transport may be initiated. However, transport should not supersede initiation of life saving intervention.

3. The concepts/actions listed can also be used in conjunction with the **5.6 Return of Spontaneous Circulation (ROSC)-Treatment Protocol** to prioritize key interventions prior to transport of cardiac arrest patients with ROSC.

MCA Quality Improvement Performance Parameters:

1. Review all cases of cardiac arrest witnessed by (in presence of) EMS providers for compliance with this protocol.

2. Ensure that specific treatments also follow other appropriate protocols, e.g., Airway Management, Shock, Tachycardia, Bradycardia, etc.

Medication References
Atropine
Epinephrine

Protocol Source/Reference: Michigan 3.7 Crashing Adult/Impending Arrest; Version 5/25/23.