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 **Pediatric Altered Mental Status-Treatment Protocol.**

1. Follow **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 **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 **Opioid Overdose Treatment and Prevention-Treatment Protocol**.
4. Restrain patient, if necessary, refer to **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, measure blood glucose level (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**.)
   a. If less than 60 mg/dL, administer oral glucose (all licensure levels).
   S b. Administer IV **dextrose** 25 gm, may titrate to fully awake and oriented.
   S c. Per MCA selection, if unable to start IV, when IV **dextrose** is indicated, administer **glucagon** 1 mg IM, or 3 mg IN (if available per MCA selection), (may be EMT skill per MCA selection).

Glucagon administration per MCA Selection
☐ Not included

	1 mg **glucagon** IM *Injectable formulation ONLY*	3 mg **glucagon** IN *Intranasal formulation ONLY*
EMT	☐	☐
Specialist	X	☐
Paramedic	X	☐

*INTRANASAL GLUCAGON ADMINISTRATION: Only glucagon that is FDA-approved for nasal administration (e.g., Baqsimi(R)) may be given by IN route. Injectable glucagon is not to be administered via IN route. EMS clinicians may assist family/patient care givers in administering glucagon that is FDA-approved for IN use, if prescribed for the patient (regardless of age).

d. Recheck the blood glucose level (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**.) 10 minutes after glucose or **glucagon** (per MCA selection) administration.

7. If glucose is >250 mg/dL, administer **NS** or **LR** IV bolus, up to 1 L.
   a. For patients with renal failure or heart failure, decrease volume to 500 mL.
8. Consider 12 Lead ECG (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**.
9. 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

Medication Protocols
Dextrose
Glucagon

Stroke or Suspected Stroke

1. Follow **General Pre-hospital Care-Treatment Protocol.**
2. Measure blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol)**, if blood glucose is less than 60 mg/dL, treat per **Altered Mental Status-Treatment Protocol**.
3. If seizure, follow **Seizure-Treatment Protocol**.
4. Utilize the Cincinnati Pre-hospital Stroke Scale (CPSS) or other MCA approved stroke scale (i.e., scales including large vessel occlusion detection). See stroke supplement if applicable for MCA specific stroke screening requirements which must include but are not limited to assessment of:
    A. Facial droop (have patient show teeth or smile)
    B. Arm drift (have patient close eyes and hold both arms straight out for 10 seconds)
    C. Speech abnormality (have patient say “the sky is blue in Michigan”)
    D. Time of last known well for patient determined and documented.
    E. Any deficit in a validated stroke scale is considered positive for stroke.
    F. Follow MCA Transport Protocol for facility selection and early alerting requirements.
6. Minimize scene time.
7. Contact destination hospital as soon as possible and begin transport.
8. If available, encourage a family member to either accompany the patient or go to the receiving facility as soon as possible.
9. Initiate vascular access. (DO NOT delay scene time for IV.) Preferentially with an 18 gauge (20 gauge minimally)
10. Monitor ECG. (DO NOT delay scene time for ECG monitoring.)
11. See MCA stroke supplement (if applicable)

Adult Fever

This protocol is intended to assist EMS providers in reducing fever in the adult patient (> 14 years of age) prior to arrival to the emergency department**. Fever is defined as a temperature of 100.4 degrees Fahrenheit (38 degrees Celsius) or greater.** Emergency management of the febrile adult involves an assessment to determine if any associated problems are present which may require emergency treatment.

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Assess for sepsis and treat according to **Sepsis–Treatment Protocol** if applicable.
3. Obtain baseline temperature and document method used.
4. Facilitate passive cooling by removing excess clothing and blankets.
5. If patient has not received antipyretic in the last four (4) hours, is alert, and is able to swallow, administer antipyretic according to MCA selection.

MCA Antipyretic Selection
(Must select at least one)

☑ **Ibuprofen** 400 mg PO
Do NOT use in pregnant patients

☐ **Acetaminophen** 650 mg PO

6. Dosing questions should be directed to online medical control.

Medication Protocols
Acetaminophen, Ibuprofen

State of Michigan
ADULT TREATMENT
CRASHING ADULT/IMPENDING ARREST

Initial Date: April 21, 2021
Revised Date: 05/25/2023 Section 3-7

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 **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 **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 **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 **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 **Electrical Therapy-Procedure Protocol**

ii. Emergent IV/IO access, per **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 **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 **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 **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 **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 Protocols
Atropine
Epinephrine

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 **General Pre-hospital Care-Treatment Protocol**
3. Ensure appropriate personnel available to provide patient and provider safety. Refer to **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 **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 End Tidal Carbon Dioxide Monitoring-Procedure Protocol**.
   c. Obtain temperature.
      i. If hyperthermic (temp >38° 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 **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 **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 Protocols
Ketamine
Midazolam

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° C (100.4 F)
   - B. Hypothermia temp<36° 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 **General Pre-Hospital Care-Treatment** Protocol.
2. Place patient in supine position.
3. Start large bore IV catheter per **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 **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 **Shock-Treatment Protocol**.
9. Monitor ETCO2 level (see **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

Seizures

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

1. Follow **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 **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 **Dextrose-Medication Protocol**
   - B. If no IV access, per MCA selection, administer **glucagon** 1 mg IM or 3 mg IN (if available per MCA selection), (may be EMT skill per MCA selection).

Glucagon administration per MCA Selection
☐ Not included

	1 mg **glucagon** IM *Injectable formulation ONLY*	3 mg **glucagon** IN *Intranasal formulation ONLY*
EMT	☐	☐
Specialist	X	☐
Paramedic	X	☐

*INTRANASAL GLUCAGON ADMINISTRATION: Only glucagon that is FDA-approved for nasal administration (e.g., Baqsimi(R)) may be given by IN route. Injectable glucagon is not to be administered via IN route. EMS clinicians may assist family/patient care givers in administering glucagon that is FDA-approved for IN use, if prescribed for the patient (regardless of age).

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 **Altered Mental Status-Treatment Protocol.**
   B. Alert
      a. Monitor for changes.
      b. Obtain vascular access.
      c. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**),

Medication Protocols
Dextrose
Glucagon
Magnesium Sulfate
Midazolam

Protocol Source/References: NAEMSO Clinical Guidelines

Respiratory Distress

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

1. Follow **General Pre-hospital Care-Treatment Protocol.**
2. Allow patient a position of comfort.
3. Determine the type of respiratory problem involved.
4. Crackles of suspected cardiac etiology or fluid overload (Refer to the **Pulmonary Edema/Cardiogenic Shock-Treatment 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 **12 Lead ECG-Procedure Protocol**.

ASYMMETRICAL BREATH SOUNDS:

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

STRIDOR/UPPER AIRWAY OBSTRUCTION:

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

RHONCHI (SUSPECTED PNEUMONIA):

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

CRACKLES~~)~~:

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

WHEEZING, DIMINISHED BREATH SOUNDS (ASTHMA, COPD):

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 **Medication Administration-Medication Protocol**

Nebulized **albuterol** administration per MCA selection
☑ EMT

2. Consider CPAP per **CPAP-Procedure Protocol**.
3. 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.

4. 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.

5. 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 **Medication Administration-Medication Protocol** (Per MCA selection may be Specialist skill)

Nebulized **albuterol/ipratropium** administration per MCA selection
☑ Specialist

6. 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)

7. 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.
8. 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.

Medication Protocols
Albuterol
Epinephrine
Ipratropium
Magnesium Sulfate
Methylprednisolone
Prednisone