



Tri-County Emergency Medical Control Authority

Serving Clinton, Eaton, and Ingham County

Approved Protocols

Updated: July 1, 2026

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Section 1-1

General Pre-Hospital Care

Patient care should be initiated at the patient's side prior to patient movement or transport for most medical conditions. EVERY PATIENT CONTACT BEGINS WITH THIS PROTOCOL

1. Pediatric patients (≤ 14 years of age or up to 36 kg) are treated under pediatric protocols when applicable.
 - a. Refer to MI MEDIC cards for medication dosing and equipment sizes.
2. Assess scene safety and use appropriate personal protective equipment.
3. For trauma refer to **General Trauma-Treatment Protocol**
4. A patient exhibiting any signs of a life-threatening illness or injury shall not be required to move on their own. This includes patients with illnesses of unknown etiology.
5. If applicable, refer to **Adult or Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**.
6. Complete primary survey.
7. When indicated, implement airway intervention per the **Airway Management-Procedure Protocol**.
8. When indicated, administer oxygen, and assist ventilations per the **Oxygen Administration-Procedure Protocol**.
9. Assess and treat other life-threatening conditions per appropriate protocol.
10. Obtain vital signs including pulse oximetry if available or required, approximately every 15 minutes, or more frequently as necessary to monitor the patient's condition (A minimum of 2 sets are required for all patient transports. Two sets are suggested for patient refusals and treat and release patients.)
11. Perform a secondary survey consistent with patient condition.
12. Follow specific protocol for patient condition.
13. Document patient care according to the **Documentation and Patient Care Records Protocol**.
- ① 14. Establish vascular access per **Vascular Access & IV Fluid Therapy-Procedure Protocol** when fluid or medication administration may be necessary.
- ② 15. Apply cardiac monitor and treat rhythm according to appropriate protocol.
- ③ 16. If applicable, obtain 12-lead ECG (Per MCA selection, may be a BLS or Specialist procedure) see **12 Lead ECG-Procedure Protocol**. Provide a copy of the rhythm strip or 12-lead ECG to the receiving facility, be sure to place patient identifiers on strip.
17. Use capnography/capnometry as directed per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**

NOTE: When possible, provide a list of the patient's medications or bring the medications to the hospital.

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Section 1-2

Abdominal Pain (Non-traumatic)

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Conduct physical exam of abdomen including assessment of central and bilateral distal pulses.
3. If symptoms of shock present refer to **Shock-Treatment Protocol**.
4. Position patient in a position of comfort if pain is non-traumatic. If trauma related, refer to **General Trauma-Treatment Protocol**
5. Do not allow patient to drink or eat anything (does not include ODT medications)
6. If patient is experiencing nausea and vomiting refer to **Nausea and Vomiting-Treatment Protocol**.
7. Treat pain per **Pain Management-Procedure Protocol**.
8.  Consider 12 Lead (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**.

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Section 1-3

Nausea & Vomiting

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Consider underlying causes of nausea and vomiting (i.e., stroke, trauma, cardiac, etc.) and further evaluate according to appropriate protocol.
3. Pediatric patients (≤ 14 years of age) utilize MI MEDIC for appropriate fluid bolus. Ondansetron does not appear on MI MEDIC; use dosing listed in protocol.
4. Isopropyl alcohol – Consider allowing patient to inhale vapor from isopropyl alcohol wipe 3 times every 15 minutes as tolerated.
5. For patients ≥ 30 kg (adult and pediatric) that are not actively vomiting, administer **ondansetron** (i.e., Zofran) 4mg ODT (availability and licensure level per MCA selection) one time.
 - a. Contraindications: Patients with Phenylketonuria (PKU)

ODT **ondansetron** included?

☒ YES ☐ NO

Per MCA Selection

☒ EMT
☒ Specialist

6. For signs of dehydration, administer **NS** or **LR** IV/IO fluid bolus (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - a. Adults: up to 1 liter.
 - b. Pediatrics: up to 20 ml/kg
7. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state.
 - a. Adults: repeat IV/IO fluid bolus to a maximum of 2 liters.
 - b. Pediatrics: repeat dose of 20 ml/kg to a maximum of 40 ml/kg
8. Administer **ondansetron** IV/IM if ODT has not already administered or if patient vomited post ODT administration. (Per MCA selection, may be a Specialist skill).

Ondansetron IV/IM

☐ Specialist

- a. Adults 4mg IV/IM

Michigan
GENERAL TREATMENT
NAUSEA & VOMITING

Initial Date: 8/24/2012

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Section 1-3

-
- b. Pediatrics administer 0.1 mg/kg IV/IM, maximum dose of 4 mg
-  9. May repeat **ondansetron** once (may be Specialist skill if selected above) after 15 minutes if nausea/vomiting persists. Second dose must be IV/IM.
- a. Adults: 4mg IV/IM
-  b. Pediatrics: 0.1 mg/kg IV/IM, maximum dose of 4 mg
- c. Total maximum dose **ondansetron** (all/any route) for pediatrics or adults is 8 mg
-  10. Consider **diphenhydramine** when previous medications have been ineffective or are contraindicated.
- a. Adult: 12.5-25 mg IV/IM. Maximum dose 25 mg.
-  b. Pediatric (>2 years of age AND > 12 kg): 1.0 mg/kg IV. Maximum dose 25 mg. NOTE – diphenhydramine for nausea and vomiting does not appear on MI MEDIC.

Medication Protocols

Diphenhydramine, Ondansetron

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Revised Date: 05/08/2023

Section 1-4

Syncope

1. Assess for mechanism of injury, if trauma sustained, refer to **General Trauma-Treatment Protocol**.
2. Follow **General Pre-Hospital Care-Treatment Protocol**.
3. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
4. Position patient
 - A. If third trimester pregnancy, position patient left lateral recumbent.
 - B. Supine for all other patients
-  5. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**)
6. If altered mental status perform stroke assessment and evaluate for stroke per **Stroke/Suspected Stroke-Treatment Protocol**
7. If altered mental status, refer to **Adult or Pediatric Altered Mental Status-Treatment Protocol**.
-  8. For signs of dehydration or hypotension, administer **NS** or **LR** IV/IO fluid bolus (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - A. Adults: up to 1 liter
 -  B. Pediatrics: up to 20 mL/kg
-  9. Hypotensive/dehydrated patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state.
 - a. Adults: repeat IV/IO fluid bolus to a maximum of 2 liters.
 -  b. Pediatrics: repeat dose of 20 ml/kg to a maximum of 40 ml/kg
 - c. Monitor for pulmonary edema.
 -  d. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
-  10. Obtain 12-lead ECG (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**. If ECG indicates cardiac event or dysrhythmia, refer to appropriate Cardiac Protocol.
-   11. Contact medical control for additional IV fluids.

Initial Date: 5/31/2012
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Section 1-5

Shock

1. Assessment: Consider etiologies of shock and refer to specific types of shock/injury first if known: **Anaphylaxis/Allergic Reaction-Treatment Protocol, Hemorrhagic Shock-Treatment Protocol, Pulmonary Edema/Cardiogenic Shock-Treatment Protocol**
2. Follow **General Pre-hospital Care-Treatment Protocol**.
3. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
4. Control major bleeding per **Bleeding Control (BCON)-Procedure Protocol**.
5. Remove all transdermal patches using gloves.
6. Prompt transport per MCA Transport Protocol.
7. Special consideration
 - a. If 3rd trimester pregnancy, position patient left lateral recumbent.
-  8. Obtain vascular access (in a manner that will not delay transport).
-  9. Administer **NS** or **LR** fluid bolus IV/IO (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - a. Adults: up to 1 liter wide open,
 -  b. Pediatrics: up to 20 ml/kg based on signs and symptoms of shock
 - c. Fluid should be slowed to TKO when SBP greater than 90 mmHg.
-  10. Consider establishing a second large bore IV of **NS** or **LR** enroute to the hospital.
-  11. Obtain 12-lead ECG, if suspected cardiac etiology. (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**.
12. If accompanying head injury, refer to **Head Injury-Treatment Protocol**.
 - a. Maintain SpO₂ $\geq 90\%$
 - b. Maintain SBP > 90 mmHg < 140 mmHg
 - c. Do NOT hyperventilate.
-  13. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state (consider preparing **epi** push dose while administering second bolus)
 - a. Adults: repeat IV/IO fluid bolus to a maximum of 2 liters.
 -  b. Pediatrics: repeat dose of 20 ml/kg to a maximum of 40 ml/kg
 - c. Monitor for pulmonary edema.
 -  d. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
-  14. If hypotension persists after IV/IO fluid bolus, administer **epinephrine** IV/IO by push dose (dilute boluses) while administering second fluid bolus.
 - a. Prepare (**epinephrine** 10 mcg/mL) by combining 1mL of 1mg/10mL **epinephrine** in 9mL **NS**, then
 - a. Adults:
 - i. Administer 10-20 mcg (1-2 mL **epinephrine** 10 mcg/mL) IV/IO
 - ii. Repeat every 3 to 5 minutes
 - iii. Titrate SBP greater than 90 mm/Hg.

Michigan
GENERAL TREATMENT
SHOCK

Initial Date: 5/31/2012

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Section 1-5



b. Pediatrics:

- i. Administer 1 mcg/kg (0.1 mL **epinephrine** 10 mcg/mL) IV/IO
- ii. Maximum dose 10 mcg (1 mL)
- iii. Repeat every 3-5 minutes

Medication Protocols

Epinephrine

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Revised Date: 08/11/2023

Section 1-6

Anaphylaxis/Allergic Reaction

A. Initial

- a. Follow **General Pre-Hospital Care-Treatment Protocol**.
- b. Pediatric patients (< 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
- c. Ensure ALS response
- d. Determine if anaphylaxis/severe allergic reaction (wheezing and/or hypotension) or an allergic reaction (itching, hives).
- e. Determine substance or source of exposure, remove patient from source if known and able.

B. Anaphylaxis/Severe Allergic reaction

- a. Assist patient in use of their own prescribed **epinephrine** auto-injector, if available
-  b. Administer **epinephrine** auto-Injector IM

TCEMCA Special Use Agreement Approval of **epinephrine auto-injector IM**

☒ MFR/BLS/LALS/ALS

MCA's will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS



1. Contact Medical Control if child appears to weigh less than 10 kg (approx. 20 lbs.), prior to epinephrine administration, if possible .
-  2. Administer pediatric **epinephrine** dose auto-injector IM if child weighs between 10-30 kg (approximately 20-60 lbs.)
3. Administer **epinephrine** auto-injector IM for adults and children weighing greater than 30 kg (approximately 60 lbs.)
4. May repeat **epinephrine** auto-injector IM one time after 3-5 minutes if the patient remains hypotensive, and auto-injector available



- c. Administer **epinephrine** IM (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/LALS/ALS

Personnel must complete MCA approved training prior to participating in draw up **epinephrine**.

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

Initial Date: 5/31/2012

Revised Date: 08/11/2023

Section 1-6

-  1. Contact Medical Control if child appears to weigh less than 10 kg (approx. 20 lbs.), prior to **epinephrine** administration, if possible.
-  2. Administer 0.15 mg (0.15 mL) of **epinephrine** IM (1mg/mL) if child weighs between 10-30 kg (approx. 20-60 lbs.)
- 3. Administer 0.3 mg (0.3 mL) of **epinephrine** IM (1mg/mL) for child weighing over 30 kg (approx. 60 lbs.) or adult patients.
- 4. May repeat **epinephrine** IM administration one time after 3-5 minutes if the patient remains hypotensive.
- 5. Maximum of 2 doses total of epinephrine (prescribed auto-injector, EMS supplied auto-injector, draw up epinephrine combined)
-  d. If wheezing and/or airway constriction, 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

-  1. If wheezing and/or airway constriction continues, administer nebulized **albuterol** 2.5 mg/3 ml **NS** nebulized and **ipratropium** 500 mcg/2.5 mL **NS** per **Medication Administration-Medication Protocol** (Per MCA selection may be Specialist skill)

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

-  e. For patients with hypotension administer **NS** or **LR** IV/IO fluid bolus (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**) refer to **Shock-Treatment Protocol**.
 - 1. Adults: up to 1 liter, wide open.
 - 2. Pediatrics: 20 mL/kg, based on signs/symptoms of shock.
 - 3. Fluid should be slowed to KVO when SBP greater than 90 mm/Hg.
-  f. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state. (Consider preparing **epi** push dose while administering second bolus)
 - 1. Adults: repeat IV/IO fluid bolus to a maximum of 2 liters.
 -  2. Pediatrics: repeat dose of 20 mL/kg to a maximum of 40 ml/kg
 - 3. Monitor for pulmonary edema.
 -  4. If pulmonary edema presents, stop fluids and contact Medical Control for direction.

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Section 1-6

-  g. If hypotension persists/is unresponsive to fluid bolus, or severe respiratory distress is unresponsive to nebulized treatment, administer push dose **epinephrine** IV/IO.

Prepare (**epinephrine** 10 mcg/mL) by combining 1mL of 1mg/10mL **epinephrine** in 9mL **NS**

1. Adults:

- i. Administer 20 mcg (2 mL **epinephrine** 10 mcg/mL) IV/IO
- ii. Repeat every 3-5 minutes
- iii. Titrate SBP greater than 90 mm/Hg.



2. Pediatrics:

- i. Administer 1 mcg/kg (0.1 mL **epinephrine** 10 mcg/mL) IV/IO
- ii. Maximum dose 10 mcg (1 mL)
- iii. Repeat every 3-5 minutes

- C. If patient is symptomatic of an allergic reaction but not in a severe allergic reaction or anaphylaxis **OR** after **epinephrine** administration:

-  a. Administer **diphenhydramine**.

1. Adult 50 mg IM or IV/IO



2. Pediatric 1 mg/kg IM/IV/IO (maximum dose 50 mg).

-  b. If wheezing, and **albuterol** not already administered, 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

-  1. If wheezing continues , administer nebulized **albuterol** 2.5 mg/3 mL **NS** and **ipratropium** 500 mcg/2.5 mL **NS** per **Medication Administration-Medication Protocol** (Per MCA selection may be Specialist skill)

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

☒ Specialist

-  c. 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)

Michigan
GENERAL TREATMENT PROTOCOLS
ANAPHYLAXIS/ALLERGIC REACTION

Initial Date: 5/31/2012

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Section 1-6

- 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)



D. Patients unresponsive to treatment, contact Medical Control

Medication Protocols

Albuterol

Diphenhydramine

Epinephrine

Ipratropium

Methylprednisolone

Prednisone

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Section 1-7

Adrenal Crisis

Purpose: This protocol is intended for the management of patients with a known history of adrenal insufficiency, experiencing signs of crisis.

Indications:

1. Patient has a known history of adrenal insufficiency or Addison's disease.
2. Presents with signs and symptoms of adrenal crisis including:
 - a. Pallor, headache, weakness, dizziness, nausea and vomiting, hypotension, hypoglycemia, heart failure, decreased mental status, or abdominal pain.

Treatment:

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.



Contact Medical Control for all adrenal crisis patients prior to treatment:

-  1. Administer fluid bolus **NS** or **LR** IV/IO (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**)
 - a. Adults: up to 1 liter.
 -  b. Pediatrics: up to 20 ml/kg
-  2. Assist with administration of patient's own hydrocortisone sodium succinate (Solu-Cortef)
 - a. Adult: 100 mg IV/IM
 -  b. Pediatric: 1-2 mg/kg IV/IM
-  3. If patient does not have their own hydrocortisone, 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)

- a. If **prednisone** is not available, patient is ≤ 6 years of age, or patient is unable to receive medication PO, administer **methylprednisolone** IV/IO/IM:
 - i. Adults: 125 mg
 -  ii. Pediatrics: 2mg/kg (max 125 mg)
-  4. Transport
5. Notify Medical Control of patient's medical history.
6. Refer to Adult or Pediatric **Altered Mental Status-Treatment Protocol**.

Medication Protocols

Methylprednisolone
Prednisone

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Revised Date: 10/19/2022

Section 1-8

Behavioral Health Emergencies

1. Assure scene is secure.
2. Follow **General Pre-hospital Care-Treatment Protocol**.
3. Respect the dignity of the patient.
4. Treat known conditions such as hypoglycemia, hypoxia, or poisoning. Refer to appropriate protocol.
5. Patients experiencing behavioral health emergencies should be transported for treatment if they have any of the following:
 - a. Can be reasonably expected to intentionally or unintentionally physically injure themselves or others or has engaged in acts or made threats to support the expectation.
 - b. Are unable to attend to basic physical needs.
 - c. Have judgement that is so impaired that he or she is unable to understand the need for treatment and whose behavior will cause significant physical harm.
 - d. Have weakened mental processes because of age, epilepsy, alcohol or drug dependence which impairs their ability to make treatment decisions.
6. Communicate in a calm and nonthreatening manner. Be conscious of personal body language and tone of voice.
7. Keep contacts to a minimum; when prudent, utilize a single rescuer for assessment.
8. Offer your assistance to the patient.
9. Constantly monitor and observe patient to prevent injury or harm.
10. Control environmental factors; attempt to move patient to a private area. Maintain escape route.
11. Attempt de-escalation, utilize an empathetic approach. Avoid confrontation.
12. If patient becomes violent or actions present a threat to patient's safety or that of others, restraint may be necessary. Refer to **Patient Restraint- Procedure Protocol**.
13. If the patient is severely agitated, combative/aggressive, and shows signs of sweating, delirium, elevated temperature, and lack of fatiguing, refer to **Hyperactive Delirium Syndrome with Severe Agitation-Treatment Protocol**.

Protective Custody - The temporary custody of an individual by a law enforcement officer with or without the individual's consent for the purpose of protecting that individual's health and safety, or the health and safety of the public and for the purpose of transporting the individual if the individual appears, in the judgment of the law enforcement officer, to be a person requiring treatment. Protective custody is civil in nature and is not to be construed as an arrest. (330.1100c (7), Sec. 100c, Michigan Mental Health Code)

Initial Date: 10/19/2022

Revised Date: 07/19/2023

Section 1-9

Opioid Overdose Treatment and Prevention

Aliases: OD, Naloxone administration, Naloxone leave behind, Accidental overdose

Indications: Decreased level of consciousness associated with respiratory depression from Opioid Overdose, signs of opioid use, scenes with indications of opioid use. For critically ill patients see **Adult or Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**.

Procedure:

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
3. If patient has respiratory depression, provide oxygenation and support ventilations. Treatment goal is to restore effective respirations; the patient need not be completely awakened.
 - a. Administer **naloxone** when (may be an MFR skill based on MCA selection):
 - i. Ventilations have been established and patient has not regained consciousness.
 - ii. There is more than 1 rescuer on scene for personnel safety precautions.

MCA Selection for



MFR naloxone administration

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



- b. Per MCA Selection (below), administer **naloxone** intranasal May repeat one time in 3-5 minutes if effective respirations not restored.

MCA selection for intranasal **naloxone** (MUST SELECT AT LEAST ONE):



Narcan® Nasal Spray 4 mg (Adults Only). Entire dose in one nostril. Additional dose in opposite nostril.



Naloxone Prefilled 2 mg/2 ml IN via Atomizer (Half dose in each nostril)

- Adult and child over 3 years: 2 ml
- Pediatric Dosing:
 - Up to 3 months: 0.5 ml
 - 3 months up to 18 months: 1 ml
 - Children 19-35 months: 1.5 ml



- c. Administer **naloxone** IM, IN or slowly IV, titrating to restore effective respirations.
 - i. Adult: 2 mg IM or IN via atomizer.
 1. IN max of two doses total.

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- ii. Adult: Up to 2 mg IV slowly, titrating to improvement in respiratory status. Repeat as needed every 3-5 minutes.
 - iii. Pediatric: 0.1mg/kg IM/IN/IV
 - d. Patients not responding to **naloxone** should have continued airway and ventilatory support.
 - e. Transport according to MCA Transport Protocol
- 4. For patients with signs and symptoms or reporting opioid withdrawal (tremors, chills, nausea/vomiting, hallucinations, muscle cramps, etc.)
 - a. Establish IV and administer **NS** or **LR** IV/IO per **Vascular Access & IV Fluid Therapy-Procedure Protocol**
 - b. For signs of dehydration,
 - i. Adults: up to 1 liter, wide open.
 - ii. Pediatrics: 20 ml/kg based on signs and symptoms
 - c. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state.
 - i. Adults: repeat IV/IO fluid bolus to a maximum of 2 liters.
 - ii. Pediatrics: repeat dose of 20 ml/kg to a maximum of 40 ml/kg
 - iii. Monitor for pulmonary edema
 - iv. If pulmonary edema presents, stop fluids and contact Medical Control.
 - d. For nausea/vomiting, refer to **Nausea & Vomiting–Treatment Protocol**
 - e. Transport according to MCA Transport Protocol
- 5. For patients who have naloxone administered and refuse transportation to the emergency department, contact Medical Control.
 - i. Patient may not:
 - 1. Have current/sustained altered mental status
 - 2. Have intentionally overdosed (for self-harm)
 - 3. Have any suicidal/homicidal ideations or thoughts of self-harm
 - ii. After contacting Medical Control for consultation, complete the patient refusal per **Refusal of Care Adult and Minor Protocol**, document the name of the facility and physician in the PCR
- 6. Leave Behind Naloxone

MCA Selection for Naloxone Leave Behind
Providers must be part of an MCA designated
Leave Behind Naloxone agency

☒ Not Included

☐ MFR ☐ EMT ☐ AEMT ☐ Paramedic

MCA will submit roster to MDHHS

- a. Indications
 - i. Patients $\geq$ 15 years old who received **naloxone** with symptom improvement.
 - ii. Patients $\geq$ 15 years old who report substance use disorder.

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- iii. Scenes where there are signs of opioid use and an individual ≥ 15 years old available to receive the Naloxone.
- b. For patients who are transported, **naloxone kits** may either be provided to
 - i. family and friends on scene (≥ 15 years old) OR
 - ii. to the patient when arriving at the hospital, if the patient is awake
- c. Provide a **naloxone kit** to patient or family/friends on scene, if accepted
- d. Document in PCR administration of kit (in procedure section)
- e. Other possible offerings when administering a kit:
 - i. Offer to properly dispose of any used needles following your agency policy.
 - ii. Refer to a community peer support team, if available
 - iii. Provide literature outlining resources for opioid use disorder or substance use disorder treatment programs in the community.
 - iv. For patients who have not suffered an acute overdose AND are willing to accept treatment for opioid use disorder or substance use disorder, the following may be offered if available:
 - 1. Alternate destination according to MCA approval (including inpatient or outpatient treatment facilities)
 - 2. Mobile crisis teams
 - 3. Other local treatment options

Medication Protocols

Naloxone

Initial Date: 10/19/2022
Revised Date: 05/08/2023

Section 1-10

Foreign Body Airway Obstruction

Alias: Choking, Airway Obstruction, FBAO

This procedure is intended for situations in which a severe foreign body airway obstruction (FBAO) has occurred. EMS personnel must be able to rapidly initiate treatment in such cases. EMS personnel should consider these cases to be potential cardiac arrests.

FOREIGN BODY AIRWAY OBSTRUCTION

This procedure is intended for situations in which a severe foreign body airway obstruction (FBAO) has occurred. EMS personnel must be able to rapidly initiate treatment in such cases. Note: Sudden cardiac arrest that occurs while a person is eating is frequently dispatched as "choking." EMS personnel should consider these cases to be potential cardiac arrests.

1. In conscious (responsive) adults and children >1 year of age, deliver abdominal thrusts in rapid sequence until the obstruction is relieved.
2. Administer chest thrusts in conscious patients in place of abdominal thrusts when:
 - a. Abdominal thrusts are ineffective (optional consideration)
 - b. Patient is obese and rescuer is unable to encircle the patient's abdomen
 - c. Patient is in the later stages of pregnancy (e.g., greater than 20 weeks)
 - d. Patient is under 1 year of age
 - e. Wheelchair bound patients
-  3. For conscious infants (under 1 year old) with evidence of severe FBAO:
 - a. Deliver repeated cycles of 5 back blows followed by 5 chest compressions until the object is expelled or the patient becomes unresponsive.
 - b. Note: Abdominal thrusts are not recommended for infants because they may damage the infant's relatively large and unprotected liver.
4. If any patient becomes unresponsive or is found unresponsive and is unable to be ventilated using the 2-person bag-valve-mask technique with oropharyngeal airway start CPR
-  5. For unconscious patients, while chest compressions are being provided, perform direct laryngoscopy. If foreign body is visible, remove using adult or pediatric Magill forceps.
-  6. If unsuccessful in visualizing foreign body, continue chest compressions and repeat direct laryngoscopy while alternating with attempts to ventilate.
7. Once FBAO is relieved, if spontaneous respiration does not return, refer to **Airway Management-Procedure Protocol**

Initial Date: 12/18/2015
Revised Date: 12/16/2022

Section 2-1

Adult/Pediatric Trauma Triage

PURPOSE

The goal of any trauma patient assessment and transportation guideline is to facilitate delivery of the patient to the most appropriate level of care in the most expeditious manner.

Exception to these triage guidelines is made for trauma patients requiring airway intervention that cannot be accomplished by pre-hospital personnel. These patients will be transported to closest appropriate hospital to allow for airway management, resuscitation and immediate transfer for definitive care as indicated.

- I. Assess Patient According to National Guideline for the Field Triage of Injured Patients
A. **RED CRITERIA** – High Risk for Serious Injury - Include the Following

1. Injury Patterns

- a. Penetrating injuries to head, neck, torso, and proximal extremities
- b. Skull deformity, suspected skull fracture
- c. Suspected spinal injury with new motor or sensory loss
- d. Chest wall instability, deformity, or suspected flail chest
- e. Suspected pelvic fracture
- f. Suspected fracture of two or more proximal long bones
- g. Crushed, degloved, mangled, or pulseless extremity
- h. Amputation proximal to wrist or ankle
- i. Active bleeding requiring a tourniquet or wound packing with continuous pressure

2. Mental Status & Vital Signs

- a. All Patients
 - i. Unable to follow commands (motor GCS < 6)
 - ii. RR < 10 or > 29 breaths/min
 - iii. Respiratory distress or need for respiratory support
 - iv. Room-air pulse oximetry < 90%
- b. Age 0-9 Years
 - i. SBP < 70mm Hg + (2 x age in years)
- c. Age 10-64 years
 - i. SBP < 90 mmHg or
 - ii. HR > SBP
- d. Age ≥ 65 Years
 - i. SBP < 110 mmHg or
 - ii. HR > SBP

- B. Patients meeting any one of the **above RED CRITERIA** should be transported to a Level 1 or Level 2 trauma center, with the following age group guidance:

1. **Adult** (15 years of age or older) – In order of preference of destination

- a. Level 1 or Level 2 Trauma Center within 45 minutes. (If Level 1 or Level 2 Trauma Center is not possible within 45 minutes by ground transport from scene – consider air medical.)
- b. Level 3 Trauma Center within 45 minutes

Michigan
**TRAUMA AND ENVIRONMENTAL
ADULT/PEDIATRIC TRAUMA TRIAGE**

Initial Date: 12/18/2015

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- c. Level 4 Trauma Center within 45 minutes
- 2. **Pediatrics** (14 years of age or younger) – In order of preference of destination
 - a. Pediatric Level 1 or Pediatric Level 2 Trauma Center if within 45 minutes
 - b. Level 1 or Level 2 Trauma Center within 45 minutes (If NEITHER a Level 1 or Level 2 Pediatric Trauma Center NOR Level 1 or Level 2 Trauma Center is possible by ground transport from scene – consider air medical.)
 - c. Level 3 Trauma Center within 45 minutes
 - d. Level 4 Trauma Center within 45 minutes.
- II. **YELLOW CRITERIA** – Moderate Risk for Serious Injury – Include the Following
 - A. Mechanism of Injury
 - 1. High-Risk Auto Crash
 - a. Partial or complete ejection
 - b. Significant intrusion (including roof)
 - i. >12 inches occupant site OR
 - ii. >18 inches any site OR
 - iii. Need for extrication for entrapped patient
 - c. Death in passenger compartment
 - d. Child (age 0-9 years) unrestrained or in unsecured child safety seat
 - e. Vehicle telemetry data consistent with severe injury
 - 2. Rider separated from transport vehicle with significant impact (e.g., motorcycle, ATV, horse, etc.)
 - 3. Pedestrian/bicycle rider thrown, run over, or with significant impact
 - 4. Fall from height > 10 feet
 - B. EMS Judgement
 - 1. Consider risk factors, including
 - a. Low-level falls in young children (age ≤ 5 years) or older adults (age ≥ 65 years) with significant head impact
 - b. Anticoagulant use
 - c. Suspicion of child abuse
 - d. Special, high-resource healthcare needs
 - e. Pregnancy > 20 weeks
 - f. Burns in conjunction with trauma
 - g. Children should be triaged preferentially to pediatric capable centers
 - 2. If concerned, transport to a trauma center
 - C. Patients meeting any one of the **YELLOW CRITERIA** WHO DO NOT MEET **RED CRITERIA** should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center per local MCA and trauma policies)

Initial Date: 12/18/2015
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Section 2-1

National Guideline for the Field Triage of Injured Patients

RED CRITERIA

High Risk for Serious Injury

Injury Pattern	Mental Status & Vital Signs
• Penetrating injuries to head, neck, torso, and proximal structures • Skull deformity, suspected skull fracture • Suspected spinal injury with new motor or sensory loss • Chest wall instability, deformity, or suspected flail chest • Suspected pelvic fracture • Suspected fracture of two or more proximal long bones • Crushed, degloved, mangled, or pulseless extremity • Amputation proximal to wrist or ankle • Active bleeding requiring a tourniquet or wound packing with continuous pressure	All Patients • Unable to follow commands (motor GCS < 6) • RR < 10 or > 29 breaths/min • Respiratory distress or need for respiratory support • Room-air pulse oximetry < 90% Age 0–9 years • SBP < 70mm Hg + (2 x age in years) Age 10–64 years • SBP < 90 mmHg or • HR > SBP Age ≥ 65 years • SBP < 110 mmHg or • HR > SBP

Patients meeting any one of the above RED criteria should be transported to a Level 1 or Level 2 trauma center.

RED CRITERIA Adult (15 years of age or older) Order of destination choices

1. Level 1 or Level 2 Trauma Center within 45 minutes.

**If Level 1 or Level 2 Trauma Center is not possible within 45 minutes by ground transport from scene – consider air medical.*

2. Level 3 Trauma Center within 45 minutes
3. Level 4 Trauma Center within 45 minutes.

RED CRITERIA Pediatrics (14 years of age or younger) Order of destination choices

1. Pediatric Level 1 or Pediatric Level 2 Trauma Center if within 45 minutes
2. Level 1 or Level 2 Trauma Center within 45 minutes

**If Level 1 or Level 2 Pediatric Trauma Center NOR Level 1 or Level 2 Trauma Center is possible by ground transport from scene – consider air medical.*

3. Level 3 Trauma Center within 45 minutes
4. Level 4 Trauma Center within 45 minutes

Initial Date: 12/18/2015
Revised Date: 12/16/2022

Section 2-1

YELLOW CRITERIA

Moderate Risk for Serious Injury

Mechanism of Injury	EMS Judgement
• High-Risk Auto Crash – Partial or complete ejection – Significant intrusion (including roof) • >12 inches occupant site OR • >18 inches any site OR • Need for extrication for entrapped patient – Death in passenger compartment – Child (age 0–9 years) unrestrained or in unsecured child safety seat – Vehicle telemetry data consistent with severe injury • Rider separated from transport vehicle with significant impact (e.g., motorcycle, ATV, horse, etc.) • Pedestrian/bicycle rider thrown, run over, or with significant impact • Fall from height > 10 feet (all ages)	Consider risk factors, including: • Low-level falls in young children (age < 5 years) or older adults (age > 65 years) with significant head impact • Anticoagulant use • Suspicion of child abuse • Special, high-resource healthcare needs • Pregnancy > 20 weeks • Burns in conjunction with trauma • Children should be triaged preferentially to pediatric capable centers If concerned, take to a trauma center

Patients meeting any one of the **YELLOW CRITERIA** WHO DO NOT MEET **RED CRITERIA** should be preferentially transported to a trauma center, as available within the geographic constraints of the regional trauma system (need not be the highest-level trauma center per local MCA and trauma policies)

NOTES

1. Medical Control may be contacted to determine the appropriate destination when indicated.
2. High risk pelvic fracture does not include isolated hip fractures without significant mechanism

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Section 2-2

General Trauma

This protocol should be followed for severely injured patients meeting trauma triage guidelines and methodology, including chest injuries, and patients with symptoms of spinal cord injury, along with extremity weakness, numbness, or sensory loss. It consists of assessment, stabilization, extrication, initiation of resuscitation, and rapid transportation to the closest appropriate trauma facility.

GENERAL TRAUMA MANAGEMENT

1. Follow **General Pre-Hospital Care-Treatment Protocol**.
2. Stabilize spinal column while opening the airway, determine level of consciousness. Refer to **Spinal Injury Assessment-Treatment Protocol**.
3. Manage airway and ventilation per **Airway Management-Procedure Protocol**. Avoid Hyperventilation/Hyperoxygenation.
4. Control major external bleeding. Refer to **Bleeding Control (BCON)-Treatment Protocol**.
5. If signs of shock are present, refer to **Shock-Treatment Protocol**.
6. Refer to **Mass Casualty Incidents-Special Operations Protocol** if appropriate.
7. Determine if the patient is taking blood thinners and document the results in the PCR.
-  8. Initiate transport according to the **Adult/Pediatric Trauma Triage-Treatment Protocol** or refer to applicable MCA Transport Protocol.
9. Alert receiving hospital as soon as appropriate. Include pertinent trauma triage criteria.
-  10. Obtain vascular access (in a manner that will not delay transport).
11. Refer to **Pain Management-Procedure Protocol**.

CHEST INJURY

1. Control hemorrhage per **Bleeding Control (BCON)-Treatment Protocol** and **Soft Tissue and Orthopedic Injuries-Treatment Protocol** and **Bleeding Control-Treatment Protocol**.
2. Assess, monitor, and treat life threatening respiratory problems.
 - A. Administer high-flow oxygen. *Avoid positive pressure ventilation if possible.*
 - B. Cover open and/or sucking chest wounds with an occlusive dressing or an FDA approved, MCA authorized commercial device.
 1. Release dressing if worsened shortness of breath, or signs of tension pneumothorax.
-  3. If tension pneumothorax suspected, perform needle decompression per **Pleural Decompression-Procedure Protocol**.

ABDOMINAL INJURY

1. Cover intestinal eviscerations with a sterile dressing moistened with sterile saline or water; cover the area with an occlusive material (aluminum foil or plastic wrap). Cover the area with a towel or blanket to keep it warm. Transport with knees slightly bent, if possible. **DO NOT PUSH VISCERA BACK INTO ABDOMEN.**
2. If signs of shock see **Shock-Treatment Protocol** and/or **Hemorrhagic Shock-Treatment Protocol**

HEAD INJURY

1. Avoid hypo or hyper ventilation. See **Head Injury-Treatment Protocol**

Burns

NOTE: When calculating Total Body Surface Area (TBSA) do not include superficial burns (erythematous tissue) in the TBSA

BURN SEVERITY DETERMINATION/DEFINITIONS

SUPERFICIAL - NOT counted in TBSA

Dry, red, easily blanching, sometimes painful (i.e., sunburn)

SUPERFICIAL PARTIAL THICKNESS – counted in TBSA

Moist, red, blanching, blisters, very painful

DEEP PARTIAL THICKNESS – counted in TBSA

Drier, more pale, less blanching, less pain

FULL THICKNESS – counted in TBSA

Dry, leathery texture, variable color (white, brown, black), loss of pin prick sensation

GENERAL TREATMENT:

1. Follow **General Pre-Hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol
3. If evidence of possible airway burn, consider proactive airway management per **Airway Management-Procedure Protocol**.
4. Administer 100% oxygen to all patients rescued from a confined space fire (i.e., building, automobile) regardless of pulse oximetry reading.
5. Determine burn extent & severity (rule of nines, or palm = 1%).
6. Keep patient warm and avoid hypothermia.
7. Assess and treat for associated injuries.
8. If burns are associated with unconsciousness or respiratory burns, or cyanide poisoning, refer to **Cyanide Exposure-Special Operations Protocol**.

THERMAL BURNS:

1. Stop the burning process. Remove smoldering and non-adherent clothing.
2. Consider potential for secondary contamination .
3. Assess and treat associated trauma.
4. Remove any constricting items.
5. Cover burns with dry clean dressings to prevent hypothermia.

CHEMICAL BURNS:

1. Protect personnel from contamination.
 - a. Identify chemical agent when possible.
2. Remove all clothing and constricting items.
3. Decontaminate patient prior to transport, brushing off dry chemicals prior to irrigation refer to **Hazard Contaminate Patient-Special Operations**.
4. Evaluate for systemic symptoms, which might be caused by chemical contamination.
5. Notify receiving hospital of possible chemical contamination.
6. Cover burned area in clean, dry dressing for transport.

ELECTRICAL INJURY:

1. Protect rescuers from live electric wires.

2. When energy source is removed, remove patient from electrical source.
3. Treat associated injuries, provide spinal precautions per **Spinal Injury Assessment-Treatment Protocol** when indicated.
4. Assess and treat contact wound(s).
-  5. Monitor patient ECG for possible arrhythmias. Treat as per specific arrhythmia protocol.

FOR ALL TYPES OF BURNS:

-  1. Obtain vascular access if indicated for pain management or fluid therapy per **Vascular Access and IV Fluid Therapy-Procedure Protocol**.
-  2. For patients with hypotension administer **LR (NS if LR not available)** IV/IO fluid bolus
 - a. Adults: up to 1 liter
 -  b. Pediatrics: up to 20 ml/kg
-  3. If patient remains hypotensive consider other underlying causes for hypotension and contact Medical Control prior to further fluid resuscitation.
-  4. For non-superficial burns without hypotension and BSA > 10% deep partial thickness (second degree) or any full thickness (third degree) administer fluids according to age
 -   a. <1 year Contact Medical Control
 -  b. 1-5 years old: 125 mL/hour
 -  c. 6-13 years old: 250 mL/hour
 - d. ≥14 years: 500 mL/hour
5. Administer analgesic medication. Refer to **Pain Management-Procedure Protocol**.

 TRANSPORT:

1. Follow local MCA Transport Protocol.
2. Special Transport Considerations
 - a. If severe airway/breathing compromise that cannot be managed transport to the closest facility.
 - b. Burn patients that also meet the field trauma triage criteria (refer to **Adult/Pediatric Trauma Triage-Treatment Protocol**) should be transported to the closest appropriate trauma facility per MCA Transport Protocol.
 - c. Consider transport directly to burn center if:
 - i. Full thickness burns
 - ii. Partial thickness ≥10% TBSA
 - iii. Any deep partial or full thickness burns involving the face, hands, genitalia, feet, perineum, or over any joints
 - iv. All patients with suspected inhalation injury
 - v. Circumferential burns
 - vi. All chemical injuries
 - vii. All high voltage (≥1,000V) electrical injuries
 - viii. Lightning injury
 - d. Consider air ambulance transportation for long transport times, pain control requiring deep sedation, and airway concerns that might necessitate advanced airway management.

Protocol Source/References: National Association of State EMS Officials (2016); American Burn Association (2022) Guidelines for Burn Patient Referral.

Initial Date: 10/1/2014
Revised Date: 11/17/2025

Section 2-4

General Crush Injury

Purpose:

This protocol should be considered when the patient has been entrapped at the scene for more than one hour, one or more full extremities trapped by an object capable of causing a crush injury, including machinery, dirt, rock, and rubble.

Crush Syndrome:

Should be suspected in patients with entrapment/compression of greater than one hour, especially when a large muscle mass/group is involved. Treatment of the patient at risk for Crush Syndrome **should begin before the patient is removed when practical.**

Treatment:

1. Follow **General Trauma-Treatment Protocol**, identify and treat life threats.
2. Pediatric patients (≤ 14 years of age) follow dosing below, albuterol use for crush injury does not appear on the MI MEDIC.
3. Assess for signs of Compartment Syndrome or Crush Syndrome.
4. Use tourniquet as indicated (see **Tourniquet Application-Procedure Protocol**).
5. Administer oxygen to patient if environment allows.
- ⑤ 6. Beginning immediately prior to release from entrapment and continued until after extrication, administer albuterol by continuous nebulization. (Per MCA selection may be EMT skill).

Nebulized **albuterol** administration



EMT

- a. Adults and Pediatrics: **Albuterol** may be continued to a maximum dose of 20 mg (eight 2.5/3ml nebulers).
- ⑤ 8. Establish large bore IV(s) and/or IO (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**) and administer fluid bolus prior to removal of patient, when practical.
 - a. Adults: 1 liter IV/IO wide open followed by 500-1,000 mL/hr
 - 🧸 b. Pediatrics: 20 mL/kg IV/IO wide open followed by 10/mL/kg/hr
 9. Treat patient pain per **Pain Management-Procedure Protocol**.
 - 📶 10. Initiate cardiac monitoring and assess for hyperkalemia, i.e., wide QRS or peaked T waves. Monitor continuously for changes.
 - 📶 11. If extrication is prolonged, hyperkalemia is suspected (peaked T waves, widened QRS, hypotension), or the patient proceeds to cardiac arrest, administer calcium chloride:

Initial Date: 10/1/2014

Revised Date: 11/17/2025

Section 2-4

a. Administer **calcium chloride**

i. Adults: 1 gm slow IVP over 5 minutes



ii. Pediatrics: 20 mg/kg slow IVP over 5 minutes, max dose 1 gram over 5 minutes

12. Perform repeated 12-Lead ECG, if conditions allow. (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**

Medication Protocols

Albuterol, Calcium Chloride

Initial Date: 5/31/2012

Revised Date: 08/11/2023

Section 2-5

Soft Tissue & Orthopedic Injuries

1. Follow **General Pre-hospital Care Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
3. Control bleeding (refer to **Bleeding Control (BCON)- Procedure Protocol**)
 - A. Utilize direct pressure.
 - B. Consider early tourniquet use (refer to **Tourniquet Application-Procedure Protocol**).
 - C. Consider MCA approved hemostatic agents and hemorrhage control devices.
 - D. Consider use of pressure dressings with deep wound packing.
 - E. Consider pelvic binding for suspected unstable pelvic fracture.
4. For uncontrolled bleeding with hemorrhagic shock see **Hemorrhagic Shock-Treatment Protocol**
5. If appropriate, maintain spinal precautions for patient per **Spinal Injury Assessment-Treatment Protocol**.
6. Assess pain on 1-10 scale and treat per **Pain Management-Procedure Protocol**.
7. Immobilize/splint orthopedic injuries as appropriate.
 - A. Special Considerations
 - i. Consider traction splinting for closed femur fractures (excluding hip/femoral neck).
 - ii. Straighten severely angulated fractures if distal extremity has signs of decreased perfusion.
 - iii. Evaluate and document neurovascular status before and after splinting.
8. Partial/complete amputations, major soft tissue injuries (e.g., mangled extremity) and open fractures.
 - A. Control bleeding as above
 - B. Cover wounds with sterile dressings moistened with sterile solution.
 - C. Splint extremity.
 - D. Recoverable amputated parts should be brought to hospital as soon as possible.
 - E. Wrap amputated part in sterile dressing moistened with sterile solution. Seal in a plastic bag and, if available, place bag in container of ice and water. DO NOT place part directly on ice.
 -  F. Obtain IV access per **Vascular Access and IV Therapy-Procedure Protocol**.
 -  G. Administer antibiotics (per MCA selection).

Initial Date: 5/31/2012

Revised Date: 08/11/2023

Section 2-5

MCA Selection for Antibiotics

- ☒ No antibiotic selection
- ☐ **Ceftriaxone Slow IV Push:** 2gm diluted with 20ml NS
 - 1. Adult: 2 gm (diluted) slow IVP 3-5 min
 - 2. Pediatrics > 2 months of age:
 - a. Administer diluted dose according to MI MEDIC cards.
 - b. If MI MEDIC cards are not available, administer 50 mg/kg (diluted) slow IVP 3-5 min (Maximum dose 2 gm)
- ☐ **Ceftriaxone Infusion:** Diluted dose added to 100 mL NS bag
 - 1. Adult: 2 gm (diluted) added to 100 mL NS bag. Infuse over 15-30 min
 - 2. Pediatrics ≥ 7 years of age:
 - a. Ceftriaxone Infusion according to MI MEDIC cards
 - b. If MI MEDIC cards are not available, add 50 mg/kg (diluted) to 100 mL NS bag. Max dose 2 gm. Infuse over 15-30
- ☐ **Cefazolin Slow IV Push:** 2 gm diluted with 20 ml or NS,
 - 1. Adults: 2 gm (diluted) slow IVP 3-5 min
 - 2. Pediatrics:
 - a. Administer diluted dose according to MI MEDIC cards.
 - b. If MI MEDIC cards are not available, administer 30 mg/kg (diluted) slow IVP 3-5 min (Maximum dose 2 gm)
- ☐ **Cefazolin Infusion.** Diluted dose added to 100 mL NS bag
 - 1. Adult: 2 gm (diluted), added to 100 mL bag of NS. Infuse over 15-30 minutes.
 - 2. Pediatrics ≥ 7 years of age:
 - a. Cefazolin Infusion according to MI MEDIC cards.
 - b. If MI MEDIC cards are not available, add 30 mg/kg (diluted) to 100 mL NS bag. Max dose 2 gm. Infuse over 15- 30 minutes.

H. Frequent monitoring of circulation, sensation, and motion distal to the injury during transport.

- 9. For severe crush injuries, refer to **General Crush Injury-Treatment Protocol**.
-  10. Impaled objects are left in place and stabilized. Removal of impaled objects is only with approval of Medical Control.
-  11. Follow MCA transport protocol.
- 12. Provide pain management per **Pain Management-Procedure Protocol**.

Medication Protocols

Cefazolin

Ceftriaxone

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 1/10/24

MCA Implementation Date: 3/25/24

MDHHS Approved: 8/11/23

MDHHS Reviewed 2023

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Section 2-6

Spinal Injury Assessment

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Assess the mechanism of injury.
 - A. Negative mechanism does not need a spine injury clinical assessment.
 - B. Patients with mechanism of injury with the potential for causing spine injury shall have a spine injury clinical assessment performed.
3. Clinical criteria are used as the basis for assessment. If any of the clinical criteria are present or if the assessment cannot be completed, the patient has a positive spine injury assessment.
4. If the mechanism of injury with the potential for causing spine injury exists, the following clinical criteria are assessed:
 - A. Altered mental status
 - B. Use of intoxicants
 - C. A painful injury that distracts the patient from assessment of the spine.
 - D. Motor and/or sensory deficit
 - E. Spine pain and/or tenderness
5. If any of the clinical criteria are present the patient has a positive spine injury assessment. If none of the clinical criteria are present the patient has a negative spine injury assessment.
6. Patients with a positive spine injury assessment should have spinal precautions maintained during movement and transport. Refer to **Spinal Precautions-Procedure Protocol**.
7. Patients over the age of 65 with evidence of a head strike mechanism of injury will have a rigid extrication collar applied even if the spinal injury clinical assessment is negative.

Protocol Source/References: NASEMSO Clinical Guidelines

Initial Date: 6/23/2016
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Traumatic Arrest

Purpose: The patient in cardiac arrest from a traumatic cause requires rapid assessment and treatment for any chance of meaningful recovery. Standard ACLS is not the optimal approach. Successful resuscitation of the traumatic cardiac arrest patient requires rapid identification and correction of specific entities and rapid transport to an appropriate facility.

1. Indications:
 - a. Patients in cardiac arrest from a traumatic source (blunt or penetrating)
2. Contraindications:
 - a. Patient that meets DOA criteria, refer to **Dead on Scene/Termination of Resuscitation-Procedure Protocol**.
 - b. Suspected traumatic cardiac arrest of more than 10 minutes prior to any interventions, refer to **Dead on Scene Termination of Resuscitation-Procedure Protocol**
 - c. If the trauma appears to be minor/minimal and a medical condition appears to be the cause of the cardiac arrest, refer to the appropriate cardiac arrest protocol.
3. Procedures
 - a. CPR - high quality CPR needs to be maintained refer to **Adult or Pediatric General Cardiac Arrest-Treatment Protocol**
 - i. It is permissible to interrupt CPR briefly for life saving interventions like needle decompression/hemorrhage control.
 - b. MEDICATIONS - Prioritize findings and reversing life threatening injuries as standard ACLS medications may not be useful.
 - c. AIRWAY - Rapid establishment of an advanced airway with 100% oxygen administration refer to **Airway Management-Procedure Protocol**
 -  d. CHEST DECOMPRESSION - Refer to **Pleural Decompression-Procedure Protocol**.
 - i. Consider bilateral needle decompression in the presence of chest trauma, regardless of findings.
 - e. HEMORRHAGE CONTROL - Bleeding control is essential refer to **Bleeding Control (BCON)-Treatment Protocol** and if applicable **Tourniquet Application-Procedure Protocol**.
 - i. Penetrating Trauma - Areas not amenable to tourniquet should have a pressure dressing and/or wound packing per **Bleeding Control (BCON)-Procedure Protocol**.
 - ii. Blunt Trauma – Place a pelvic binder (commercial or a sheet) on all patients with blunt or blast trauma suffering traumatic arrest. If using a sheet, it should be wrapped around the greater trochanters.

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- iii. Consider TXA, as available, per **Hemorrhagic Shock-Treatment Protocol**.
- Ⓢ f. **VOLUME ADMINISTRATION** - Rapid vascular access should be obtained. If large bore IV access cannot be rapidly obtained, IO access preferably in the proximal humerus should be obtained **NS** or **LR** rapidly infused. Refer to **Vascular Access & IV Fluid Therapy-Procedure Protocol**
 - i. Adults: up to 1 liter
 - ii. Pediatrics: up to 20 ml/kg
- g. These interventions are not a substitute for rapid transport to an appropriate facility.
 -  i. If these interventions fail to correct the issues, contact Medical Control for consultation regarding termination of efforts.
- 4. Termination of efforts should be considered if:
 - a. Blunt traumatic arrest in asystole
 - b. No signs of life for greater than 10 minutes of intervention
 - c. Transport time greater than 15 minutes
 - d. Injuries incompatible with life.
- 5. Continuation of care should be considered with:
 - a. Penetrating trauma with signs of life (reactive pupils), PEA with HR greater than 40
 - b. ROSC
 - c. Hypothermia
 - d. Pregnant females with gestational age estimated at greater than 20 weeks.
 - e. Patients under 18 years of age.
 -  i. Transport to the closest appropriate trauma facility per MCA Transport Protocol.
- 6. Post arrest care:
 - a. If pulses are obtained, refer to **Adult or Pediatric Return of Spontaneous Circulation-Treatment Protocol**.
 - i. Consider TXA per **Hemorrhagic Shock-Treatment Protocol**

Drowning/Submersion Injury

Drowning is defined as, “A process resulting in primary respiratory impairment from submersion or immersion in a liquid medium.” (American Heart Association, 2010).

For patients who have been submerged and in cardiac arrest:

1. In cold water (water temperature less than 70° F/21° C)
 - A. Initiate resuscitative efforts if submersion time is less than 90 minutes.
 -  i. Contact Medical Control for instructions on transport timing and destination for in-hospital rewarming.
 - B. For submersion time greater than 90 minutes see **Dead on Scene/Termination of Resuscitation-Procedure Protocol**
2. In warm water (temperature is greater than 70° F/21° C)
 - A. Initiate resuscitative efforts if submersion time is less than 30 minutes.
 -  i. Contact Medical Control for further direction, which may include instructions on transport timing, destination, or termination of resuscitation.
 - B. For submersion time greater than 30 minutes see **Dead on Scene/Termination of Resuscitation-Procedure Protocol**
3. It may be impractical to determine water temperature; subsurface water temperatures may be considerably colder than surface temperature. When in doubt, consider water to be cold.
4. Time estimation begins when the patient is presumed to be submersed.

For patients who have been submerged and NOT in cardiac arrest

1. If SCUBA incident with rapid ascent, the maintain the patient in a supine position.
2. Follow **General Pre-hospital Care-Treatment Protocol**.
 - A. Administer high flow oxygen.
 - B. Primary survey should include proactive airway management and restoration of adequate oxygenation and ventilation.
 - C. Exam should include consideration of possible c-spine injury.
 - D. Assess for other associated injury such as injury to the head or dive-related emergency.
 - E. Assess patient's temperature.
 - F. If patient is hypothermic, go to **Hypothermia/Frostbite-Treatment Protocol**, handle patients gently. Excessive/aggressive movement can precipitate cardiac arrest.
 - G. Prevent further heat loss by transport in a warm environment.
 - H. Patient should be dry and/or wrapped in vapor barrier, as available.
 - I. Patients may develop subacute respiratory difficulty after drowning and therefore all victims of drowning should be transported for observation.
 -  i. Consider transport to facility with hyperbaric oxygen therapy capability.
 -  J. Consider CPAP (Per MCA selection, may be a BLS procedure) follow **CPAP-Procedure Protocol**.
 -  K. Contact Medical Control if no transport is considered or no transport is requested.

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***Note:** For SCUBA incident with rapid ascent, contact Medical Control. Medical Control may consider contacting the Divers Alert Network (DAN) @ 919-684-9111 to arrange evacuation and hyperbaric re-compression at a properly equipped and staffed chamber.

Protocol Source/References: AHA, National Association of State EMS Officials; cold water temp - <https://www.coldwatersafety.org/why-did-we-pick-70f-21c>

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Poisoning/Overdose/Environmental Exposure

NERVE AGENT/ORGANOPHOSPHATE EXPOSURE refer to **Nerve Agent/Organophosphate Pesticide Exposure-Special Operations Protocol**.

GENERAL MANAGEMENT OF TOXIC EXPOSURE (INCLUDING INGESTION)

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
3. Use proper personal protective equipment and prepare for decontamination if necessary.
4. Remove clothing exposed to chemical (dry decon) refer to **Hazardous Contaminated Patient-Special Operations**
5. Identification of the substance the patient has been exposed to.
6. If altered mental status, refer to **Adult or Pediatric Altered Mental Status-Treatment Protocol**.
7. If suspected opioid overdose, refer to **Opioid Overdose Treatment and Prevention-Treatment Protocol**.
8. If respiratory distress, refer to **Adult or Pediatric Respiratory Distress-Treatment Protocol**.
9. If the patient is seizing, refer to **Adult or Pediatric Seizure-Treatment Protocol**.
10. Alert receiving hospital if patient may present HAZMAT risk.
11. Sample of drug or substance and any medication or poison containers should be brought in with patient if it does NOT pose a risk to rescuers.
12. Refer to **Pain Management-Procedure Protocol**
13. For inhalation exposures, ensure high flow oxygen is provided.
-  14. If suspected cyanide gas exposure, refer to **Cyanide Exposure-Special Operations Protocol** and contact Medical Control immediately.
-  15. If suspected nerve agent or organophosphate pesticide, refer to **Nerve Agent/Organophosphate Pesticide Exposure-Special Operations Protocol** and contact Medical Control immediately.
-  16. Obtain 12 lead (Per MCA selection, may be a BLS or Specialist procedure) refer to **12-Lead ECG- Procedure Protocol** and monitor cardiac rhythm, treat dysrhythmia per appropriate dysrhythmia protocol.
-  17. For extrapyramidal dystonic reactions, administer **diphenhydramine**.
 - a. For adults (>14 years of age), 50 mg IV.
 -  b. For pediatrics (≤ 14 years of age), 1 mg/kg IV (max dose 50 mg).
-   15. For symptomatic tricyclic antidepressant ingestions (tachycardia, wide complex QRS), contact Medical Control for administration of **sodium bicarbonate**
 - a. Adults (>14 years of age), 50 mEq IV, repeat as needed per medical control.
 -  b. Pediatrics (≤ 14 years of age), 1mEq/kg IV, repeat as needed per medical control.
-   16. For symptomatic calcium channel blocker overdose, contact Medical Control and consider **calcium chloride**
 - a. Adults (>14 years of age), 1 gm IV.
 -  b. Pediatrics (≤ 14 years of age), 20 mg/kg IV (max dose 1 gm).

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17. For other specific medications in overdose (i.e., beta blockers), contact Medical Control for further guidance.

EYE CONTAMINATION:

1. Irrigate continuously with **NS**, tap water, or bottled water (if available) for 15 minutes (attempt to continue enroute) or as directed by Medical Control.
2. For alkali exposure, maintain continuous irrigation.
3. If available (per MCA selection), administer **tetracaine**, 1-2 drops per eye every 5 minutes, maximum of 5 doses, to facilitate irrigation. Ensure patient does not rub eye.



Tetracaine Included?

☒ Yes ☐ No

SKIN ABSORPTION:

1. Brush off dry chemicals before irrigation
2. Irrigate continuously with **NS** or tap water for 15 minutes or as directed by Medical Control.

MANAGEMENT OF BITES AND STINGS

SPIDERS, SNAKES AND SCORPIONS:

1. Protect rescuers. Bring in spider, snake or scorpion if captured and contained or if dead for accurate identification.
 - a. CAUTION: Dead snakes can reflexively bite after “death”. Ensure animal is dead prior to placement into container and utilize tools that keep a distance between the rescuer and the animal whenever possible (e.g., shovel, tongs, etc.)
2. Ice for comfort on spider or scorpion bite; DO NOT apply ice to snake bites.
3. SNAKES
 - a. Determine if localized or systemic reaction to bite:
 - 1) Localized Signs/Symptoms (pain and swelling, numbness/tingling, bruising)
 - a) Consider pain management, per **Pain Management-Procedure Protocol** (avoid **morphine** if possible as the histamine release from **morphine** may lead to confusion between envenomation vs. medication effects)
 - 2) Systemic Signs/Symptoms (hypotension, altered mental status, hemorrhage, airway swelling/compromise)
 - a) Prepare to manage airway & hypotension; if necessary, refer to **Airway Management-Procedure Protocol, Adult or Pediatric Respiratory Distress-Treatment Protocol, Shock-Treatment Protocol** and **Anaphylaxis/Allergic Reaction-Treatment Protocol**
 - b) Consider pain management, per **Pain Management-Procedure Protocol** (avoid morphine if possible)
 - 3) Obtain specific snake information:
 - a) Species, color, rattle, elliptical pupils, or thermal pit (photos are encouraged)

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- b. Evaluate and document appearance of wound: location, puncture marks and number, timing of bite, and prior first aid.
- c. Remove all constricting items from bitten limb (rings, jewelry, watch, clothing etc.)
- d. Immobilize bitten part below the level of the heart (sling, loose wrapping)
- e. Initiate prompt transport.
- f. If present, mark margins of erythema and/or edema with a marker and include time measured.
- g. Do NOT use ice, refrigerants, tourniquets, scalpels, or suction devices.
- h. Specific Precautions
 - 1) Eastern Massasauga Rattlesnake is the only venomous snake native to Michigan.
 - 2) Exotic venomous snakes i.e., pets/zoo animals, are common; obtain species information and antivenom if available on-scene, from pet owner/zookeeper and transport with patient. Antivenom should be available on-site if patient is coming from a zoo.
 - 3) Transport to the closest facility.

BEES, CENTIPEDES, SLUGS, AND WASPS:

1. Remove stinger by scraping out. Do not squeeze venom sac if this remains on stinger.
2. Provide wound care.
3. Observe patient for signs of systemic allergic reaction. Treat anaphylaxis per **Anaphylaxis/Allergic Reaction-Treatment Protocol**.

ANIMAL BITES

1. Assure scene safety and contact Police or Animal Control Officer if necessary.
2. DO NOT collect live animals to avoid self-injury; delegate collection of animals to Animal Control Officer, if necessary, for rabies identification. Do NOT bring live animals to the Emergency Department or healthcare facility.
3. Consider pain management per **Pain Management-Procedure Protocol**.
4. Control bleeding per **Bleeding Control (BCON)-Treatment Protocol**.
5. Rabies evaluation:
 - a. The following animals are known transmitters and confer risk requiring emergent evaluation: Bat, Skunk, Fox, Dog, Cat, Ferret, Livestock, Opossum, Woodchuck
 - b. Obtain the following animal information: type/species of animal, wild/stray vs domestic, bite vs scratch, animal immunization status, and if animal collection was possible
 - c. All patients at risk for rabies exposure should be transported, follow local MCA transport protocols. If patient refuses transport, they should be advised to seek immediate medical evaluation for rabies evaluation and possible vaccination. Document the refusal per **Refusal of Care; Adult and Minor-Procedure Protocol**.
6. For additional information, see www.michigan.gov/rabies or contact Michigan Department of Health and Human Services: Communicable Disease Division

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Medication Protocols

Calcium Chloride

Diphenhydramine

Sodium Bicarbonate

Tetracaine

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Revised Date: 03/17/2025

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Heat Emergencies

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years of age) utilize **MI MEDIC** for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol
3. Determine history/evidence of heat exposure.
-  4. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**) and treat hypoglycemia per **Adult or Pediatric Altered Mental Status-Treatment Protocol**.

HEAT CRAMPS:

1. Move the patient to a cool environment and attempt oral liquids (may use commercial sports/rehydration).

HEAT EXHAUSTION:

1. Move the patient to a cool environment.
2. Remove tight clothing.
3. Cool patient, provide air conditioning/fanning. Avoid chilling/shivering.
-  4. Obtain IV/IO Access and administer fluid bolus **NS** or **LR** wide open (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - a. Adults (≥ 14 years of age): up to 1 liter
 -  b. Pediatrics (<14 years of age): up to 20 mL/kg
5. Patient may take oral fluid replacement rather than IV if not nauseated. Allow oral intake of cool fluids or water (may use commercial sports/rehydration drinks). Do not permit patient to drink if altered mental status, abdominal pain, or nausea is present. Avoid carbonated, alcoholic and caffeinated beverages.
6. Treat nausea according to **Nausea/Vomiting-Treatment Protocol**.

HEAT STROKE:

1. Move the patient to a cool environment.
2. Remove tight clothing.
3. Immediate cooling – provide air conditioning and fanning. Avoid chilling/shivering.
4. Place patient in semi-reclining position with head elevated.
-  5. Obtain IV/IO Access and administer fluid bolus **NS** or **LR** wide open (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - a. Adults (≥ 14 years of age): up to 1 liter
 -  b. Pediatrics (<14 years of age): up to 20 mL/kg
7. Treat nausea according to **Nausea/Vomiting-Treatment Protocol**.
-  8. Initiation of aggressive cooling may take priority over transport. Contact Medical Control for further cooling and transport guidance.

MANAGEMENT OF PATIENT WITH EXERTIONAL HEAT STROKE

1. Cool as quickly as possible via ice or cold-water immersion. If immersion is unavailable, cooling should be initiated by dousing the entire skin surface of the patient with cold water and facilitated by fanning.

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- b. Cooling may be augmented with the addition of ice packs over as much of the body surface as possible. The most effective locations for ice packs are the palms of the hands, soles of the feet, and the cheeks.
 2. Cool first, transport second when possible.
 - a. If total time (time on scene and transport) exceeds 30 minutes, on-scene immersive cooling should be immediately implemented prior to evacuation.
 - b. Cooling of the patient by the best available means should be continued during transport. Ice-water immersion may be continued with containment devices such as body bags or tarpaulins.
 3. Obtain IV/IO Access (consider resting the patient's arm on the side of immersion tub to start IV while patient is still immersed) and administer fluid bolus **NS** or **LR** wide open (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 -  a. Adults (≥ 14 years of age): up to 1 liter
 -  b. Pediatrics (<14 years of age): up to 20 mL/kg
 - c. Efforts to provide IV fluids in suspected heat stroke should not delay rapid whole-body cooling.
 4. If patient experiences seizures, refer to **Adult or Pediatric Seizure-Treatment Protocol**.
 -  5. Monitor ECG (lead cables can go in the water).

Protocol Source/References: NASEMSO CLINICAL GUIDELINES

Wilderness Medical Society Clinical Practice Guidelines for the Prevention and Treatment of Heat Illness:
2024 Update. *Wilderness & Environmental Medicine*, Volume 35, Issue 1_suppl.

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Hypothermia/Frostbite

1. Follow **General Pre-hospital Care-Treatment Protocol**

HYPOTHERMIA:

1. If cardiac arrest develops follow **Adult or Pediatric General Cardiac Arrest-Treatment Protocol**.
2. Move patient to a warm dry place, then remove wet clothing & wrap in warm blankets and protect from wind exposure. The patient who can be evacuated to a warm environment (the ambulance) within 30 min should have their clothing left in place and wrapped in a vapor/wind barrier. Once in a warm environment, remove wet clothing, gently dry the skin and wrap in warm blankets.
3. If patient temperature is less than 30° C (86° F)
 - A. Gentle handling is required.
 - B. Facilitate transport immediately
-  4. If the patient's temperature is greater than 30° C (86° F) or patient shivering & conscious:
 - A. Apply heat packs to axillae and torso if possible.
 - B. Use warmed humidified oxygen if available.
5. If altered mental status:
 - A. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**)
 - B. Treat as indicated per **Adult or Pediatric Altered Mental Status-Treatment Protocol**
 - C. Assess for other causes of alterations of mentation and treat according to applicable protocols.
6. If hypotensive, follow **Shock-Treatment Protocol**.
 -  A. If a commercial device designed for warming IV fluids is available, warm fluid prior to administration.
7. Administer oxygen.
 - A. If a commercial device designed for warming and/or humidifying oxygen is available, oxygen should be warmed and humidified prior to administration.
8. If patient is alert, administer warm non-caffeinated beverages (if available) by mouth, slowly.

SUSPECTED FROSTBITE:

1. Remove wet or constricting clothing. Keep skin dry and protected from wind.
2. Do not allow the limb to thaw if there is a chance that limb may re-freeze before evacuation is complete or if patient must walk to transportation.
3. Dress injured areas lightly in clean cloth to protect from pressure, trauma or friction. Do not rub. Do not break blisters.
4. Keep patient warm.
5. Frostbitten areas should be supported and elevated during transport.
6. Treat pain per **Pain Management-Procedure Protocol**.

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Protocol Source/References: NASEMSO CLINICAL GUIDELINES Wilderness Medical Society Practice Guidelines for the Out-of-Hospital Evaluation and Treatment of Accidental Hypothermia. WILDERNESS & ENVIRONMENTAL MEDICINE, 25, 425–445 (2014)

Head Injury – Moderate & Severe TBI

Purpose: Reduction of morbidity and mortality associated with Traumatic Brain Injury (TBI). The treatment of a patient with suspected TBI should focus on four important clinically identifiable conditions: hypoxia, hyperventilation, hypotension, and hemorrhage. Overall approach: Continuous monitoring of O2 saturation with high-flow oxygen regardless of O2 saturation, avoidance of positive pressure ventilation (PPV) whenever possible and use of continuous quantitative end-tidal CO2 (ETCO2) monitoring in patients requiring positive pressure ventilation, blood pressure monitoring every 3-5 minutes and using IV fluids to maintain BP above target, and assessment for signs of hemorrhage or hemorrhagic shock with use of applicable bleeding control interventions.

I. TBI Criteria (moderate or severe TBI)

1. Anyone with physical trauma and a mechanism consistent for a brain injury AND one or more of the following:
 - a. Any loss of consciousness OR any altered mental status (e.g., GCS <15)
 - b. Multisystem trauma requiring PPV, whether the primary need for PPV was from TBI or from other injuries.
 - c. Seizures: pre-traumatic or post-traumatic seizures whether continuing or not.
 -  d. In infants (where mental status may be difficult to interpret): any decreased level of consciousness or decreased responsiveness.

II. Procedure:

1. Follow **General Pre-hospital Care Protocol**
2. Transport according to **Adult and Pediatric Trauma Triage-Treatment Protocol** and MCA Transport Protocol.
3. Manage Airway & Oxygenation (Prevent Hypoxemia)
 - a. All patients identified with moderate or severe head injury should receive continuous high-flow oxygen immediately by non-rebreather mask.
 -  b. Monitor and maintain SpO2 equal to or greater than 90%.
 - c. If hypoxia is present despite high-flow oxygen, basic maneuvers for airway repositioning should be attempted, followed by reevaluation.
 - d. If this does not restore SpO2 to 90% or greater, or if there is inadequate ventilatory effort, bag-valve-mask (BVM) ventilation should be performed, 2-person with supplemental oxygen and basic airway adjuncts.
 - e. Advanced airway placement only when BVM ventilation ineffective or other conditions warrant advanced airway (e.g., long transport time) refer to **Airway Management-Procedure Protocol**
4. Manage Ventilation (Prevent Hyperventilation)

Note: Identify and treat hypoventilation as well as prevent hyperventilation when assisting ventilation. As much as possible maintain normal ventilation. Hyperventilation decreases cerebral blood flow and worsens secondary brain injury. Strict attention on avoiding hypo- and hyper- ventilation is critical. It has been shown that repeatedly that inadvertent hyperventilation happens reliably if not

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meticulously prevented. Use Pressure-Controlled Bags (PCBs) and Ventilation Rate Timers (VRTs) when available.

- a. Utilize basic airway adjuncts (OPA, NPA).
- b. Ventilate at the following rates:
 - i. Adults (>14 years of age) ventilate at 10 breaths per minute.
 -  ii. Children (≥ 2 years of age - ≤ 14 years of age) ventilate at 20 breaths per minute.
 -  iii. Infants (< 2 years of age) ventilate at 25 breaths per minute.
-  c. Continuously monitor SpO₂ and maintain $\geq 90\%$
-  d. Continuously monitor end tidal carbon dioxide per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**.
 - i. Maintain ETCO₂ 35-45 mmHG (ideal target is 40 mmHG)
- e. If hypoventilation or hypoxia persists after these interventions, consider advanced airway options, go to **Airway Management-Treatment Protocol**.

5. Manage Hemorrhage

- a. See **Bleeding Control (BCON)-Treatment Protocol**
- b. Consider **TXA**, if available, per the **Hemorrhagic Shock-Treatment Protocol**
 -  i. Consider contacting medical control for patients who may not meet clinical criteria for **TXA** administration, but hemorrhage is suspected.

6. Manage Blood Pressure (Prevent Hypotension)

Note: Do not wait for the patient to become hypotensive.

-  a. Obtain vascular access per **Vascular Access & IV Fluid Therapy-Procedure Protocol** for all patients.
 - i. Consider IO placement per **Vascular Access and IV Therapy-Procedure Protocol** in the presence of hypotension or other signs of shock when an IV cannot be established quickly.
- b. Do not wait for patient to become hypotensive. Decreasing SBP or other signs of compensated shock (increasing heart rate, increasing respiratory rate) require proactive fluid administration.
- c. Target blood pressures:
 - i. Adults (>14 years of age) SBP ≥ 110 mmHG
 -  ii. Pediatrics (11-14 years of age) SBP ≥ 110 mmHG
 -  iii. Pediatrics (> 1 year- ≤ 10 years of age) SBP $> 70 + (\text{age in years} \times 2)$
 -  iv. Pediatrics (1-12 months) SBP > 70 mmHG
 -  v. Pediatrics (< 1 month) SBP > 60 mmHG
-  d. Administer **LR** or **NS**
 - i. Frequent blood pressure evaluation is required for immediate responsiveness to blood pressures that have fallen below target.
 - ii. Adults (> 14 years of age) up to 1L wide open for immediate correction.
 -  iii. Pediatrics (≤ 14 years of age) 20 ml/kg wide open for immediate correction.
 - iv. Once target blood pressures are achieved, fluids should be stopped.
 -  v. Subsequent fluid bolus may be required to maintain blood pressures above target

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- e. Check blood glucose (may be MFR skill), see **Blood Glucose Testing-Procedure Protocol** and treat hypoglycemia per **Adult or Pediatric Altered Mental Status-Treatment Protocol**

Protocol Source/References: Excellence in Prehospital Injury Care (EPIC) | Excellence in Prehospital Injury Care - Traumatic Brain Injury (arizona.edu); NASEMSO National Model EMS Clinical Guidelines Version 3.0

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Bleeding Control

Indications:

Patients with significant traumatic or non-traumatic (i.e., hemodialysis access) external hemorrhage

1. Follow **General Pre-hospital Care-Treatment Protocol** and **Soft Tissue & Orthopedic Injuries-Treatment Protocol**.
2. Apply direct pressure to the wound with clean gauze using universal precautions.
3. If the bleeding is not controlled with direct pressure, treat according to the location of the wound.
 - a. Extremity bleeding - apply tourniquet: (Refer to **Tourniquet Application-Procedure Protocol**)
 - i. If tourniquet unsuccessful apply second/adjacent tourniquet per **Tourniquet Application-Procedure Protocol**.
 - ii. NOTE- tourniquet may be painful, see **Pain Management-Procedure Protocol**.
 - b. Junctional hemorrhage (neck, axilla/shoulder or groin bleeding):
 - i. Pack wound with MCA approved hemostatic dressing (if available and following manufacturer's instructions) or clean gauze.
 - ii. Use as much of the dressing/gauze as needed to stop the blood flow.
 - iii. Quickly apply pressure until the bleeding stops. (Approximately 3-5 minutes)
 - iv. Leave the dressing in place and wrap area with bandaging to secure the dressing.
 - v. Caution must be exercised when packing neck wounds to avoid airway compromise. Avoid an encircling bandage of the neck.
 - vi. Packing penetrating head, chest, and abdominal wounds is contraindicated.
4. Do not remove the bandage or hemostatic dressing/gauze
5. Elevate the injury, if possible.
6. Reassess for bleeding through or around the dressing.
7. For patients who have signs or symptoms of shock, secondary to hemorrhage, refer to **Hemorrhagic Shock-Treatment Protocol**.
8. Transport according to **Adult and Pediatric Trauma Triage-Treatment Protocol** and MCA Transport Protocol

Notes:



If hemostatic dressing is used, contact medical control to advise of application, document time of use, and send packaging from dressing to hospital with patient for removal instructions.

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Hemorrhagic Shock

Purpose: To provide treatment for patients displaying signs and symptoms of shock attributed to hemorrhage including trauma and **severe postpartum hemorrhage**.

1. Follow **General Pre-hospital Care-Treatment Protocol** control bleeding according to **Bleeding Control (BCON)-Treatment Protocol** when applicable.
-  2. Transport according to **Adult and Pediatric Trauma Triage-Treatment Protocol** and MCA Transport Protocol.
3. No intervention should delay transport.
-  4. Obtain vascular access.
-  5. For signs of hypotension unaccompanied by moderate to severe head trauma administer NS or LR IV/IO fluid bolus IV/IO (refer to **Vascular Access and IV Fluid Therapy-Procedure Protocol**).
 - a. Adults (≥ 14 years of age): up to 1 liter
 - b. Pediatrics (< 14 years of age): up to 20 mL/kg
-  6. For signs of hypotension accompanied by moderate to severe head trauma refer to **Head Injury-Treatment Protocol** for fluid administration guidelines.
7. Consider other causes of traumatic hypotension and treat accordingly. (Tension pneumothorax see **Pleural Decompression-Procedure Protocol**, neurogenic shock see **Shock-Treatment Protocol**)
-  8. Hypotensive patients unaccompanied by moderate to severe head trauma should receive additional IV/IO fluid boluses, as indicated by hemodynamic state.
 - a. Adults (≥ 14 years of age): repeat IV/IO fluid bolus to a maximum of 2 liters.
 -  b. Pediatrics (< 14 years of age): repeat dose of 20 ml/kg to a maximum of 40 ml/kg.
 - c. Monitor for pulmonary edema.
 -  d. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
-  9. Per MCA Selection, if bleeding is uncontrolled and non-compressible, administer Tranexamic Acid (**TXA**)

Tranexamic Acid (TXA) Included



Yes



No

Age greater than 18 years old AND > 50 kg

1. Destination must be capable of administering 2nd dose.
2. Draw up and mix 1 gram of **TXA** into a 100 ml bag of **normal saline** solution (0.9% Sodium Chloride Solution).
 - a. Use a filter needle if the medication is supplied in an ampule.
 - b. Apply pre-printed "**TXA** added" fluorescent-colored label to IV bag.
3. Administer mixed medication via piggyback into IV/IO line over 10 minutes.

Michigan
Trauma and Environmental
HEMORRHAGIC SHOCK

Initial Date: 3/23/2018

Revised Date: 05/23/2023

Section: 2-14

a. Hospital Notification and Documentation



- i. Contact Medical Control - the receiving hospital must be verbally notified that **TXA** has been given, prior to arrival.
- ii. A verbal report that **TXA** was administered must be provided to hospital ED staff (receiving physician preferred) upon hand-off of the patient from EMS.
- iii. The administration of **TXA** MUST be clearly documented on the EMS patient care record.



- b. Contact Medical Control-Medical Control may order **TXA** for selected patients with suspected compensated shock not meeting the above criteria.

Medication Protocols

Tranexamic Acid (TXA)

Sexual Assault

Note to Responders: Victims of sexual assault commonly require psychological support.

- Respect all stress they may be enduring and be thoughtful with your speech and movement.
 - Touching may be traumatic. Be clear and communicate what you are doing and any procedures or physical assessments that are completed.
- I. Treat any life-threatening injuries or other emergencies first and according to protocol.
 - II. Neck Injury
 - a. Signs and symptoms of strangulation and neck injury are not visible over 50% of the time.
 - i. Evaluate for: loss of conscious, inability to recall how they became unconscious, voice change, involuntary urination, or defecation.
 - b. Patients with signs or symptoms of any injury to the neck (e.g., strangulation) are at significant risk for complications.
 - c. Visible signs may include:
 - i. Any injury to the neck
 1. Redness
 2. Scratches
 3. Rope marks
 4. Bruising (especially thumb prints)
 5. Red eyes
 - d. Symptoms
 - i. Spasms of the neck/throat
 - III. Incontinence of bowel or bladder (this is a significant symptom associated with near death). During treatment, attempt to maintain evidence, refer to **Crime Scene Management-Procedure Protocol**.
 - a. Do not cut through tears or stains. Only cleanse skin when necessary to provide immediate treatment.
 - b. Any clothes that have been removed from the patient, should be bagged in paper bags, and brought with the patient to the hospital, if possible.
 - c. Explain to the patient why they should not eat, drink, smoke, bathe, change clothing, or go to the bathroom. If they must urinate, ask that they not wipe.
 - d. If the patient desires and/or mandatory reporting is indicated, notify law enforcement if they are not present.
 - e. Any incident involving a minor or a vulnerable adult is a mandatory reporting event.
 - IV. At the request of the patient, further assessment and treatment may be delayed for law enforcement arrival only if no life-threatening situation is present.
 - V. During transport, allow the patient to choose the preferable attendant, if possible.
 - VI. Do not communicate details of a sexual assault over an open radio channel. Use telephone or other secure electronic communication.
 - VII. If the patient declines transport to the hospital:

Michigan
**TRAUMA AND ENVIRONMENTAL
SEXUAL ASSAULT**

Initial Date: 10/28/2022
Revised Date: 05/23/2023

Section 2-15

- a. Advise patients of risks and document according to the **Refusal of Care, Adult and Minor-Procedure Protocol**
- b. Encourage patients to seek follow-up care at a local specialized treatment center.
- c. If law enforcement is not present, and the patient refuses law enforcement contact, advise patient that evidence of assault is best collected within 120 hours.
- d. Advise of available resources by seeking treatment or assistance, such as:
 - i. MCA Specific resources, if available (i.e., Community Integrated Paramedicine if available and patient consents, MCA specific resource sheets if available, etc.)
 - ii. Michigan's sexual assault hotline 1-855-VOICES4 (1-855-864-2374)
 - iii. Links to local resources: <https://www.michigan.gov/mdhhs/safety-injury-prev/domestic-violence/find-services-in-your-area>
 -  iv. If unaware of local resources, and law enforcement is not available, contact Medical Control

VIII. Documentation

- a. Excited utterances, which are statements that patients make while under stress from the event, should be noted as direct quotes from the patient
- b. Thorough and accurate documentation of the incident is integral for continuity of care and the legal process.
- c. In the case of refusals, risks documented should be specific to the type of injury and assault that occurred.

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).
 - b. Administer IV **dextrose** 25 gm, may titrate to fully awake and oriented.
 - 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).

Michigan
ADULT TREATMENT
ALTERED MENTAL STATUS

Initial Date: 11/15/2012

Revised Date: 03/03/2025

Section 3-1

-  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

Michigan
ADULT TREATMENT
STROKE OR SUSPECTED STROKE

Initial Date: 5/31/2012

Revised Date: 12/02/2022

Section 3-2

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)

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**

Michigan ADULT TREATMENT RESPIRATORY DISTRESS

Initial Date: 11/15/2012
Revised Date: 08/11/2023

Section 3-3

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 $\leq$ 6 years of age, or patient is unable to

Michigan
ADULT TREATMENT
RESPIRATORY DISTRESS

Initial Date: 11/15/2012

Revised Date: 08/11/2023

Section 3-3

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

Initial Date: 11/15/2012
Revised Date: 03/03/2025

Section 3-4

Seizures

For patients $\leq$ 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

Initial Date: 11/15/2012

Revised Date: 03/03/2025

Section 3-4



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

Initial Date: 5/31/2012

Revised Date: 05/30/2023

Section 3-5

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 $>38^{\circ}\text{C}$ (100.4 F)
 - B. Hypothermia temp $<36^{\circ}\text{C}$ (96.8 F)
 - C. Heart rate $>90\text{bpm}$
 - 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

Michigan
ADULT TREATMENT
HYPERACTIVE DELIRIUM SYNDROME WITH
SEVERE AGITATION

Initial Date: 10/1/2014

Revised Date: 05/26/2023

Section 3-6

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.

Michigan
ADULT TREATMENT
HYPERACTIVE DELIRIUM SYNDROME WITH
SEVERE AGITATION

Initial Date: 10/1/2014

Revised Date: 05/26/2023

Section 3-6



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

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 $SpO_2 <90\%$

c. Monitoring

- i. NIBP(cycle every 3 minutes)
-  ii. SpO_2

State of Michigan
ADULT TREATMENT
CRASHING ADULT/IMPENDING ARREST

Initial Date: April 21, 2021

Revised Date: 05/25/2023

Section 3-7

-  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**.

State of Michigan
ADULT TREATMENT
CRASHING ADULT/IMPENDING ARREST

Initial Date: April 21, 2021

Revised Date: 05/25/2023

Section 3-7

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

Initial Date: 10/24/2025

Revised Date:

Section: 3-8

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

Michigan
OBSTETRICS AND PEDIATRICS
PEDIATRIC MEDICATION EMERGENCY
DOSING AND INTERVENTION CARDS

Initial Date: 9/25/2014

Revised Date: 01/27/2023

Section 4-1

Pediatric Medication Emergency Dosing and Intervention Cards

Purpose: Instructions for using the Michigan Medication Emergency Dosing and Intervention Cards (MI-MEDIC). Pediatric patients (≤ 14 years) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol

1. Obtain correct weight of the child
 - a. If patient's actual weight is known, use MI MEDIC card for that weight. (DO NOT CONFUSE POUNDS and KILOGRAMS)
 - b. If patient's weight is not known, use length-based resuscitation tape to determine the proper color zone.
 - c. If a length-based resuscitation tape not available, use patient's age to determine color of card to use. DO NOT GUESS THE WEIGHT OF THE CHILD.
2. Select appropriate weight-based medication for intervention.
3. Select the corresponding colored card
4. Select desired medication from Cardiac Resuscitation or Medical Conditions
5. ASSURE medication CONCENTRATION on hand is as specified on card
6. Some medications should be diluted as instructed on card
7. If dilution is required, follow steps to dilute entire vial of medication prior to drawing up final ml volume to administer.
8. Confirm medication dose and volume to be delivered.
9. Administer volume of medication as desired.
-  10. Contact Medical Control for questions or concerns.

NOTE: Some medication doses have been rounded for safety and ease of use for the prevention of medication errors. These doses may not exactly correspond with the mg/kg dose in the pediatric treatment protocols. The use of these rounded doses has been approved for use and administration will be acceptable as long as the dose was referenced from the MI MEDIC cards.

Childbirth and Related Obstetrical Emergencies

Purpose: To provide the process for the assessment and management of the mother for childbirth and childbirth related emergencies. Assessment and care of newborns and infants under 30 days old, see **Newborn/Neonatal Assessment and Resuscitation-Treatment Protocol**.

1. Follow **General Pre-hospital Care-Treatment Protocol**

2. Assessment Information

- A. Past Medical History: previous births, previous complications, history of preeclampsia/eclampsia.
- B. Current History: duration of gestation (weeks), whether single or multiple births are expected, or any prior pregnancy complications.
- C. Specific Objective Findings: vital signs, assess contractions (duration, frequency).
-  D. In the presence of licensed health care providers (e.g., physician, licensed midwife), contact Medical Control for care not consistent with protocols.
- E. Determine whether to transport or remain at scene due to imminent delivery. Indications of impending, imminent delivery may include:
 - a. Multiple pregnancy, strong regular contractions, every 2 minutes or less, ruptured membrane, bloody show, need to push or bear down, crowning
-  F. Obtain vascular access if time permits per **Vascular Access and IV Fluid Therapy-Procedure Protocol**

3. Management of Normal Delivery

- A. If signs of newborn delivery are imminent, and there is no time to transport, prepare for delivery.
- B. Have oxygen and suction readily available for care of the newborn.
- C. Try to find a place for maximum privacy, cleanliness, and warmth.
- D. Allow safe birth position of choice.
- E. Monitor patient for signs of hypotension. If signs develop, position patient so weight of uterus is to patient's left side.
- F. Drape if possible, using clean sheets.
- G. Encourage mother to relax and take slow deep breaths through her mouth.
- H. Reassure her throughout process.
- I. As baby's head begins to emerge from vagina, support it gently with hand and towel to assist in delivery.
 - a. Do not pull baby's head or neck once head is delivered.
- J. After head is delivered look and feel to see if cord is wrapped around baby's neck (see Nuchal Cord management below).
- K. As the shoulders deliver, carefully hold, and support the head and shoulders as the body delivers, may be suddenly – and the baby is very slippery! Use a sterile towel if available to help support the baby.
- L. Note the time of delivery.

- M. Begin newborn assessment per **Newborn/Neonatal Assessment and Resuscitation-Treatment Protocol**.
 - N. After 1 minute, clamp cord about 5–6 inches from the abdomen with two clamps; cut the cord between the clamps.
 - a. While cord is attached, take care to ensure the baby is not significantly higher positioned than the mother to prevent blood from flowing backwards from baby to placenta.
 - b. If resuscitation is needed baby can still benefit from a 1- minute delay in cord clamping but start resuscitation immediately see **Newborn/Neonatal Assessment and Resuscitation-Treatment Protocol**
 - O. Place the baby skin to skin on the mother's abdomen on its side with head lower than the body. (Suction with a bulb syringe should be reserved for infants with obvious obstruction)
 - P. Prevent heat loss
 - a. Gently dry baby off and remove all wet linen
 - b. Ensure the environment is warm.
 - c. Place infant cap on baby
 - Q. For near/at term vigorous newborns, with conscious stable mothers, allow infant to remain on mother's chest during assessment and cover both baby and the mother with warm dry blankets until transport. Refer to **Safe Transport of Children in Ambulances-Treatment Protocol**.
4. Management of mother post-delivery.
- A. Obtain vital signs.
 - B. Assess for signs of preeclampsia/eclampsia.
 - C. Assess for signs of postpartum hemorrhage.
 -  a. If blood loss is significant, place IV and administer **NS** or **LR** fluid bolus of 1 liter wide open.
 - i. Monitor for pulmonary edema.
 -  ii. If pulmonary edema presents, stop fluids and contact Medical Control for direction.
 -  b. Administer oxygen NRB at 15 LPMN (if not already)
 -  c. Contact Medical Control for severe hemorrhage for consideration of **TXA** per **Hemorrhagic Shock-Treatment Protocol**
 - i. Fundal massage should take place concurrently.
 - D. Placenta delivery
 - a. Generally, takes place within 20 minutes of delivery.
 - b. Place placenta in basin or plastic bag and transport with mother.
 - c. Following placental delivery, massage the uterus to aid in contraction of the uterus.
 - d. Continue to assess the mother's uterus and bleeding in route to the hospital to assure the uterus is contracted and blood loss is minimal. Report blood loss upon arrival at the hospital.



5. Management of Abnormal Deliveries



- A. Apply high flow oxygen to mother.
- B. Contact Medical Control as soon as appropriate.
- C. **Nuchal Cord** (cord wrapped around neck)
 - a. If the cord is around the neck and loose, slide gently – over the head DO NOT TUG.
 - b. If the loop is too tight to slip over the head, attempt to slip the cord over the shoulders and deliver the body through the loop.
 - c. If the cord is around neck and snug, clamp the cord with 2 clamps and cut between the clamps.
 - d. Wait for the next contraction for completion of delivery of the body. DO NOT PULL on the baby.

D. **Shoulder Dystocia**

- a. If delivery fails to progress after head delivers, quickly attempt the following:
 - i. Hyperflex mother's hips to severe supine knee-chest position (i.e., McRoberts' maneuver).
 - ii. Apply firm suprapubic pressure to attempt to dislodge shoulder. This often requires two EMS clinicians to perform and allows for delivery in up to 75% of cases.
 - iii. Attempt to angle baby's head as posteriorly as possible but NEVER pull.
 - iv. Continue with delivery as normal once the anterior shoulder is delivered.

D. **Breech position**

- a. Place mother supine, allow the buttocks, feet, and trunk to deliver spontaneously, then support the body while the head is delivered.
- b. When delivering breech, you may need to rotate the baby's trunk clockwise; or sweep the legs from the vagina.
- c. Once the legs are delivered support the body to avoid hyperextension of the head; keep the fetus elevated off the umbilical cord.
- d. If needed, put the mother in a prone kneeling position which may assist in the delivery of the newborn
- e. Assess for presence of prolapsed cord and treat as below.
- f. If head fails to deliver, place gloved hand into vagina with fingers between infant's face and uterine wall to create an open airway. Place your index and ring fingers on the baby's cheeks forming a "V" taking care not to block the mouth and allowing the chin to be tilted toward the chest flexing the neck.
- g. NEVER pull on the body, especially a preterm or previable baby. Support the baby's body while mother pushes when she feels the urge.

E. **Prolapsed Cord**

- a. Place mother in a supine position with hips supported on a pillow.
- b. Place gloved hand into vagina and gently lift head/body off the cord.
- c. Assess for pulsations in cord, if no pulses are felt, lift the presenting part off the cord
- d. Wrap the prolapsed cord in moist sterile gauze.

- e. Maintain until relieved by hospital staff.
- f. If previous techniques are not successful, mother should be placed in prone knee chest position or extreme Trendelenburg with hips elevated.
- g. DO NOT ATTEMPT TO PUSH CORD BACK INTO THE PATIENT!
- F. **Arm or limb presentation** – Life threatening condition.
 - a. Immediate transportation in prone knee chest position or extreme Trendelenburg with hips elevated.
 - b. Delivery should not be attempted outside the hospital.
- G. **Multiple births**
 - a. Immediate transportation
 - b. Multiple birth infants are typically small birth weight and will need careful management to maintain body heat.
 - c. For imminent delivery proceed with procedures of normal delivery as above including clamping of cord and skin to skin.
 - d. Prepare additional supplies for subsequent births.
 - e. There may be time to transport between births.
6. Management of Preeclampsia or Eclampsia
 - A. Management of Preeclampsia or Eclampsia include women 20 weeks gestation up to 6 weeks post childbirth.
 - a. **Magnesium sulfate** can be administered prior, during, or post childbirth.
 - b. Be prepared to support respirations for infants born post **magnesium sulfate** administration.
 - B. Signs of eclampsia
 - a. Seizure - Any pregnant patient who is seizing should be assumed to have eclampsia and treated as such until arrival at the hospital.
 - C. Treatment of eclampsia – (actively seizing)
 - a. High flow oxygen
 - Ⓢ b. Establish IV access per **Vascular Access and IV Therapy-Procedure Protocol**
 - Ⓢ i. Administer **magnesium sulfate** 4 gm over 10 minutes IV/IO until seizure stops. Administration of **magnesium sulfate** is best accomplished by adding **magnesium sulfate** 4gm to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
 - ii. If eclamptic seizure does not stop after **magnesium sulfate**, then refer to **Seizure-Treatment Protocol**
 - D. Signs of severe preeclampsia
 - a. BP systolic greater than 160 mmHG or diastolic greater than 110 mmHG with one or more of the associated symptoms below
 - i. Headache
 - ii. Confusion/altered mental status
 - iii. Vision changes including blurred vision, spots/floaters, loss of vision (these symptoms are often a precursor to seizure)
 - iv. Right upper quadrant or epigastric pain
 - v. Shortness of breath/Pulmonary edema
 - vi. Ecchymosis suggestive of low platelets (bruising, petechiae)
 - vii. Vaginal bleeding suggestive of placental abruption

- viii. Focal neurologic deficits suggesting hemorrhagic or thromboembolic stroke
- ix. Marked peripheral edema
- b. Prophylaxis treatment for severe preeclampsia
 - i. High flow oxygen
 -  ii. IV access per **Vascular Access and IV Therapy-Procedure Protocol**
 -  iii. Administer magnesium sulfate (per MCA selection)



Pre radio **magnesium sulfate** administration (without Medical Control contact)



 Post radio **magnesium sulfate** administration (contact Medical Control) prior to administration.

- iv. Administer **magnesium sulfate** 4gm IV/IO. Administration of **magnesium sulfate** is best accomplished by adding **magnesium sulfate** 4gm to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
- c. Immediate transport

NOTES:

1. Hyperextension means head back,
2. Hyperflexion means head to chest.
3. There are two patients to assess, manage, and transport during childbirth – request resources as appropriate.

Medication Protocols
Magnesium Sulfate

Michigan Emergency Protocol
OBSTETRICS AND PEDIATRICS
NEWBORN/NEONATAL ASSESSMENT
AND RESUSCITATION

Initial Date: 08/09/2017

Revised Date: 12/30/2022

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Newborn & Neonatal Assessment and Resuscitation

Aliases: newborn assessment, newborn treatment, newborn resuscitation, neonatal resuscitation.

Purpose: Infants less than 30 days old are considered neonates. This protocol is intended for assessment of newly born infants, and/or the resuscitation of newly born infants less than 30 days old.

ASSESSMENT OF NEWLY BORN INFANTS

1. History
 - A. Date and time of birth
 - B. Onset of symptoms
 - C. Prenatal history (prenatal care, substance abuse, multiple gestation, maternal illness)
 - D. Birth history (maternal fever, meconium, prolapsed or nuchal cord, bleeding)
 - E. Estimated gestational age (may be based on last menstrual period)
2. Immediate Assessment & Procedures
 - A. **Respiratory (R of APGAR)**
 - i. Assess rate and effort (strong, weak, or absent; regular or irregular)
 - ii. Absent
 - a. If the baby does not breathe spontaneously, stimulate by gently rubbing its back or slapping the soles of its feet.
 - iii. Respiratory distress (grunting, nasal flaring, retractions, gasping, apnea **OR** no return of spontaneous breathing after stimulation.
 - a. position airway (sniffing position) and clear airway as needed
 - b. If thick meconium or secretions present suction mouth then nose
 - c. Initiate ventilation with appropriately sized equipment and 21% oxygen (room air)
 - B. **Heart rate/pulse (P of APGAR)**(fast, slow, or absent), auscultation of chest is the preferred method
 - i. If heart rate >100 beats per minute
 - a. Monitor for central cyanosis, provide blow-by oxygen as needed
 - b. Monitor for signs of respiratory distress. If apneic or significant distress:
 - 1) Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
 - ii. If heart rate < 100 beats per minute
 - a. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
 - b. Primary indicator of improvement is increased heart rate
 - c. Only use minimum necessary volume to achieve chest rise
 - d. If no improvement after 90 seconds, provide ventilations with supplemental oxygen (100%) until heart rate normalizes (100 or above)
 - iii. If heart rate < 60 beats per minute

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- a. Ensure effective ventilations with supplementary **oxygen** and adequate chest rise
 - b. If no improvements after 30 seconds, initiate chest compressions
 - 1) Two-thumb-encircling-hands technique is preferred
 - c. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
 - d. Per MCA selection, consider intubation per **Airway Management-Procedure Protocol**
 - C. **Color/Appearance (first A of APGAR)** (central cyanosis, peripheral cyanosis, pallor, normal)
 - a. Administer blow-by oxygen for a few minutes until baby's core color is pink.
 - D. **Grimace (G of APGAR)**
 - E. **Muscle tone/activity (second A of APGAR)**(poor or strong)
3. APGAR score for witnessed deliveries, based on above assessment should be noted at one minute and five minutes after delivery.
- i. A – appearance (color)
 - ii. P – pulse (heart rate)
 - iii. G – grimace (reflex irritability to slap on sole of foot)
 - iv. A – activity (muscle tone)
 - v. R – respiration (respiratory effort)
 - vi. Each parameter gets a score of 0 to 2.

APGAR SCORING

Sign	0	1	2
Appearance – skin color	Bluish or paleness	Pink or ruddy; hands or feet are blue	Pink or ruddy; entire body
Pulse – heart rate	Absent	Below 100	Over 100
Grimace – reflex irritability to foot slap	No response	Crying; some motion	Crying; vigorous
Activity – muscle tone	Limp	Some flexion of extremities	Active; good motion in extremities
Respiratory effort	Absent	Slow and Irregular	Normal; crying

4. Prevent heat lost
 - A. Maintain warm environment
 - B. Keep infant dry and covered with dry blankets
 - C. Keep infant's head covered with infant cap
 - D. Swaddle infant to mother skin to skin if infant is stable until transport
5. For patient transport, refer to **Safe Transportation of Children in Ambulances-Treatment Protocol**.

Pediatric Altered Mental Status

The purpose of this protocol is to provide for the assessment and treatment of pediatric patients with altered mental status of unknown etiology such as alcohol, trauma, poisonings, seizures, behavioral problems, stroke, environmental causes, infection, etc.

- For pediatrics less than < 24 hours old – refer to **Newborn/Neonatal Assessment and Resuscitation-Treatment Protocol**
- For critically ill patients refer to **Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**
- 1. Follow **General Pre-hospital Care-Treatment Protocol**.
- 2. Pediatric patients (≤ 14 years) utilize **MI MEDIC** for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
- 3. Restrain patient, if necessary, refer to **Patient Restraint-Procedure Protocol**.
- 4. Ensure adequate oxygenation, ventilation, and work of breathing.
 - ⚙ A. Monitor SpO₂
 - Ⓢ B. Consider use of capnography
- ⚙ 5. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**
- 6. Check temperature if febrile go to **Pediatric Fever-Treatment Protocol**
- Ⓢ 7. Start IV/IO if needed per **Vascular Access & IV Therapy-Procedure Protocol**
- 8. If blood glucose < 60 mg/dl:
 - A. Altered, able to swallow AND 3 months old or older– administer **oral glucose**.
 - Ⓢ B. Not alert – administer **dextrose** according to **MI MEDIC** or table below

Color	Age	Weight	Dose	Concentration	Volume		Concentration	Volume
Grey	0-2 months	3-5 kg (6-11 lbs.)	2.5g	Dextrose 12.5%	20 mL	OR	Dextrose 10%	25 mL
Pink	3-6 months	6-7 kg (13-16 lbs.)	3.25g	Dextrose 25%	13 mL	OR	Dextrose 10%	33 mL
Red	7-10 months	8-9 kg (17-20 lbs.)	4.25g	Dextrose 25%	17 mL	OR	Dextrose 10%	43 mL
Purple	11-18 months	10-11 kg (21-25 lbs.)	5g	Dextrose 25%	20 mL	OR	Dextrose 10%	50 mL
Yellow	19-35 months	12-14 kg (26-31 lbs.)	6.25g	Dextrose 25%	25 mL	OR	Dextrose 10%	63 mL
White	3-4 years	15-18 kg (32-40 lbs.)	8g	Dextrose 25%	32 mL	OR	Dextrose 10%	80 mL
Blue	5-6 years	19-23 kg (41-50 lbs.)	10g	Dextrose 25%	40 mL	OR	Dextrose 10%	100 mL
Orange	7-9 years	24-29 kg (52-64 lbs.)	12.5g	Dextrose 50%	25 mL	OR	Dextrose 10%	125 mL
Green	10-14 Years	30-36 kg (65-79 lbs.)	15g	Dextrose 50%	40 mL	OR	Dextrose 10%	150 mL

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9. Per MCA selection, if unable to start IV, administer **glucagon** IM/IN (if available per MCA selection) according to MI-MEDIC, (may be EMT skill per MCA selection). If **MI MEDIC** is unavailable follow dosing as below.

Glucagon administration per MCA Selection

☒ Not included

	Glucagon IM *Injectable formulation ONLY*	Glucagon IN *Intranasal formulation ONLY*
	A. Patients < 5 years of age administer glucagon 0.5 mg IM B. Patients ≥ 5 years of age administer glucagon 1 mg IM	A. Patients < 5 years of age Do NOT Administer B. Patients ≥ 5 years of age administer glucagon 3 mg IN
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).

10. If patient respiratory depression persists and/or patient has not regained consciousness despite adequate oxygenation and ventilatory support administer **naloxone** per **Opioid Overdose Treatment and Prevention-Treatment Protocol**



11. Contact Medical Control for repeat **dextrose**.

12. Contact Medical Control for repeat **naloxone**.

NOTE:

- Instructions for diluting **dextrose**
 - To obtain **dextrose 10%**, discard 40 ml out of one amp of D50, then draw up 40 ml of **NS** into the D50 ampule
 - To obtain **dextrose 12.5%**, discard 37.5 ml out of one amp of D50, then draw 37.5 ml of **NS** into the D50 ampule.
 - To obtain **dextrose 25%**, discard 25 ml out of one amp of D50, then draw 25 ml of **NS** into the D50 ampule.
 - May utilize **dextrose 10%** for all ages 5 ml/kg (0.5 gm/kg) up to 250 ml, according to **Dextrose-Medication Protocol**.
- To avoid extravasation, a patent IV must be available for IV administration of

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dextrose. **Dextrose** should always be pushed slowly (e.g., over 1-2 minutes).

Medication Protocols

Dextrose

Glucagon

Naloxone

Pediatric Respiratory Distress

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Pediatric patients (≤ 14 years) utilize MI MEDIC cards for appropriate medication dosage. When unavailable, utilize pediatric dosing listed within protocol.
3. Assess the patient's airway.
 - a. If unable to ventilate patient after airway repositioning, refer to **Foreign Body Airway Obstruction-Treatment Protocol** and/or **Airway Management-Procedure Protocol**.
 - b. Respiratory Failure or Respiratory Arrest, refer to **Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**.
 - c. Consider anaphylaxis. Refer to **Allergic Reaction/Anaphylaxis-Treatment Protocol**.
4. Allow the patient a position of comfort that also maintains an open airway.
5. Titrate SpO₂ to 94%. Have a parent assist with oxygen via blow-by or mask support if needed.
6. Airway should be managed by least invasive method possible.
7. Suction secretions if needed.
-  8. Consider CPAP if appropriate size available. Follow **CPAP-Procedure Protocol**.
9. Do not delay transport for interventions.
-  10. Attempt vascular access only if necessary for patient treatment.

Suspected Bronchospasm (Wheezing):

-  1. Assist the patient in using their own **albuterol** Inhaler, if available, prescribed to the patient, and not expired.
-  2. 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

-  3. Consider CPAP if appropriate size available. Follow **CPAP- Procedure Protocol**.
-  4. In cases of respiratory failure administer **epinephrine auto-injector**.

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.

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PEDIATRIC RESPIRATORY DISTRESS

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- a. If child appears to weigh less than 10 kg (approximately 20 lbs.), contact medical control prior to administering epinephrine, if possible.
- b. If child weighs between 10-30 kg (approximately 20-60 lbs.), administer **pediatric epinephrine auto-injector** IM.
- c. If child weighs greater than 30 kg (approximately 60 lbs.), administer **epinephrine auto-injector** IM.

5. In cases of respiratory failure, administer **epinephrine** 1 mg/ml IM (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.



- a. If child appears to weigh less than 10 kg (approximately 20 lbs.), contact medical control prior to epinephrine if possible.
- b. If child weighs between 10-30 kg (approximately 20-60 lbs.), administer **epinephrine** (concentration of 1mg/1mL) 0.15 mg (0.15mL) IM
- c. If child weighs 30 kg or greater; administer **epinephrine** (concentration of 1mg/1mL) 0.3 mg (0.3 mL) IM



6. If available per MCA selection, administer **prednisone** 50 mg PO to children > 6 years of age.

Additional Medication Option:



Prednisone 50 mg tablet PO
(Children > 6 y/o)

- a. If prednisone is not available, patient is $\leq$ 6 years of age, or patient is unable to receive medication PO, administer **methylprednisolone** 2 mg/kg IV/IO/IM.

Stridor/Suspected Croup:

1. Croup is most common in children 6 months to 6 years of age.
2. Commonly associated with recent upper airway infection or fever.

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PEDIATRIC RESPIRATORY DISTRESS

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3. If foreign body is suspected and unable to be removed, contact Medical Control prior to administration of nebulized **racpinephrine/epinephrine**. See **Foreign Body Airway Obstruction-Treatment Protocol**.



4. Consider humidified oxygen.

5. If patient presents with stridor at rest without suspected airway obstruction, administer nebulized **racpinephrine/epinephrine** per MCA selection (Medical Control contact not required):

MCA Selection



Racpinephrine 2.25% inhalation solution via nebulizer

Administer by placing 0.5 mL of **Racpinephrine** 2.25% inhalation solution in nebulizer and dilute with 3 mL of normal saline.



Epinephrine 5 mg (1mg/1ml) nebulized

6. Do not delay transport.

Respiratory Failure or Arrest:

1. Ventilate the patient using an appropriately sized BVM with supplemental oxygen.

a. Chest rise is the best indicator of successful ventilation.

b. Ventilate at a rate appropriate for the patient:

i. Infant: 30 breaths per minute

ii. Child: 20 breaths per minute



c. Utilize capnography per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol** to maintain end tidal CO₂ 35-45 mmHg.

2. BVM is the preferred method of ventilation for patients under 8 years old.

a. When unable to ventilate with BVM and basic airway adjuncts, consider advanced airway. See **Airway Management-Procedure Protocol**.

3. If opioid overdose is suspected, administer **naloxone** according to MI-MEDIC cards. If MI-MEDIC is unavailable, administer **naloxone** per **Opioid Overdose Treatment and Prevention-Treatment Protocol**.



4. Monitor EKG and refer to **Pediatric Crashing Patient/Impending Arrest-Treatment Protocol** or appropriate cardiac protocol as required.

Medication Protocols

Albuterol, Epinephrine, Methylprednisolone, Prednisone, Racpinephrine

Pediatric Fever

This protocol is intended to assist EMS providers in reducing fever in the pediatric patients 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 child 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. Pediatric patients (≤ 14 years) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
3. Obtain baseline temperature and document method used.
 - a. Children less 60 days old require a documented rectal temperature (including time temperature obtained) prior to antipyretic administration.
4. Administer antipyretic according to MCA selection

MCA Antipyretic Selection

(Must select at least one)

- ☒ **Ibuprofen (children > 6 months of age)**
- ☒ **Acetaminophen**

-  5. Administer **ibuprofen** if child is over 6 months old, has not been given **ibuprofen** (e.g., Motrin/Advil) or any medication containing ibuprofen (i.e., cold medication) in the last 6 hours and is alert.
 - i. If patient's weight is known, utilize that weight and MI-MEDIC for dosing.
 - ii. If patient's weight is not available, utilize length-based tape and MI-MEDIC for dosing.
 - iii. If MI-MEDIC is not available, use dosing chart below.
- OR

 6. Administer **acetaminophen** if the child has not been given **acetaminophen** (e.g., Tylenol) or any medication containing acetaminophen (i.e., cold medication) in last four (4) hours and is alert, and:
 - i. If patient's weight is known, utilize that weight and MI-MEDIC for dosing.
 - ii. If patient's weight is not available, utilize length-based tape and MI-MEDIC for dosing
 - iii. If MI-Medic is not available, use dosing chart below.
-  7. If any question concerning alertness or ability to swallow, **DO NOT ADMINISTER.**
8. Dosing questions should be directed to online medical control.

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OBSTETRICS AND PEDIATRICS
PEDIATRIC FEVER

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Children's Elixir Dosing Table			
Child's Weight	Child's Age	Acetaminophen 160 mg/5mL	Ibuprofen 100 mg/5mL
3-5 kg (6-12 lbs.)	0-2 mos.	1.25 mL (40 mg)	DO NOT GIVE
6-7 kg (13-16 lbs.)	3-6 mos.	3 mL (96 mg)	DO NOT GIVE
8-9 kg (17-20 lbs.)	7-10 mos.	4 mL (128 mg)	4 mL (80 mg)
10-11 kg (21-25 lbs.)	11-18 mos.	5 mL (160 mg)	5 mL (100 mg)
12-14 kg (26-31 lbs.)	19 mos.-35 mos.	6 mL (192 mg)	6 mL (120 mg)
15-18 kg (32-40 lbs.)	3-4 yrs.	7 mL (224 mg)	7.5 mL (150 mg)
19-23 kg (41-51 lbs.)	5-6 yrs.	9 mL (288 mg)	9.5 mL (190 mg)
24-29 kg (52-64 lbs.)	7-9 yrs.	12 mL (384 mg)	13 mL (260 mg)
30-36 kg (65-79 lbs.)	10-14 yrs.	15 mL (480 mg)	15 mL (300 mg)

Medication Protocols

Acetaminophen

Ibuprofen

Protocol Source/References: http://assets.babycenter.com/ims/Content/first-year-health-guide_acetaminophen_chart_pdf.pdf

Pediatric Seizures

1. Follow **General Pre-Hospital Care – Treatment Protocol**
2. For focal seizures, contact Medical Control
3. **IF PATIENT IS ACTIVELY SEIZING (GENERALIZED TONIC-CLONIC):**
 - A. Protect patient from injury
 - B. Maintain airway and provide supplemental oxygen
 - C. Administer **midazolam** according to the **MI-MEDIC** Cards
 - i. If **MI-MEDIC** is unavailable, administer **midazolam** 0.1 mg/kg IM, maximum single dose 10 mg
 - ii. If IV established prior to seizure activity, administer midazolam 0.05 mg/kg IV/IO, maximum single dose of 5 mg
 - iii. Monitor Spo2, EKG, and waveform capnography (**per End Tidal Carbon Dioxide Monitoring – Procedure Protocol**) after midazolam administration
 - D. Consider trauma; If evidence or suspicion of trauma, treat according to applicable protocol in addition to treating seizures
 - E. Check blood glucose (may be MFR skill, see **Blood Glucose Testing – Procedure Protocol**)
 - i. Start IV/IO if needed
 - ii. Administer **dextrose** according to **MI-MEDIC** when blood glucose is <60 mg/dL
 1. If **MI-MEDIC** is unavailable, utilize the table below

Color	Age	Weight	Dose	Concentration	Volume		Concentration	Volume
Grey	0-2 months	3-5 kg (6-11 lbs.)	2.5g	Dextrose 12.5%	20 mL	OR	Dextrose 10%	25 mL
Pink	3-6 months	6-7 kg (13-16 lbs.)	3.25g	Dextrose 25%	13 mL	OR	Dextrose 10%	33 mL
Red	7-10 months	8-9 kg (17-20 lbs.)	4.25g	Dextrose 25%	17 mL	OR	Dextrose 10%	43 mL
Purple	11-18 months	10-11 kg (21-25 lbs.)	5g	Dextrose 25%	20 mL	OR	Dextrose 10%	50 mL
Yellow	19-35 months	12-14 kg (26-31 lbs.)	6.25g	Dextrose 25%	25 mL	OR	Dextrose 10%	63 mL
White	3-4 years	15-18 kg (32-40 lbs.)	8g	Dextrose 25%	32 mL	OR	Dextrose 10%	80 mL
Blue	5-6 years	19-23 kg (41-50 lbs.)	10g	Dextrose 25%	40 mL	OR	Dextrose 10%	100 mL
Orange	7-9 years	24-29 kg (52-64 lbs.)	12.5g	Dextrose 50%	25 mL	OR	Dextrose 10%	125 mL
Green	10-14 Years	30-36 kg (65-79 lbs.)	15g	Dextrose 50%	40 mL	OR	Dextrose 10%	150 mL

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-  iii. If unable to start IV, administer **glucagon** IM/IN (if available per MCA selection), (may be EMT skill per MCA selection)
1. If **MI-MEDIC** is unavailable, utilize the table below

Glucagon administration per MCA Selection

☒ Not included

	Glucagon IM *Injectable formulation ONLY*	Glucagon IN *Intranasal formulation ONLY*
	A. Patients < 5 years of age administer glucagon 0.5 mg IM B. Patients ≥ 5 years of age administer glucagon 1 mg IM	A. Patients < 5 years of age Do NOT Administer B. Patients ≥ 5 years of age administer glucagon 3 mg IN
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).

-  F. If seizure persists 10 minutes after initial dose of **midazolam** and correction of low blood glucose, repeat **midazolam** one time (per MCA selection)

☐ Pre-radio **midazolam** administration (without Medical Control contact)

 ☐ Post-radio **midazolam** administration (contact Medical Control prior to administration)

- i. 0.1 mg/kg IM, maximum single dose of 10 mg
OR

- ii. If IV available, 0.05 mg/kg IV/IO, maximum single dose of 5 mg

-  G. If seizures persist after second dose, consider underlying causes and contact Medical Control for further instructions

4. **IF PATIENT IS NOT ACTIVELY SEIZING**, monitor and treat known underlying causes, if possible

- A. Check blood glucose (may be MFR skill, see **Blood Glucose Testing – Procedure Protocol**) and treat as outlined above (3. E.)

- i. If blood glucose <60 mg/dL:

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1. Altered, able to swallow, AND 3 months old or older –
Administer oral glucose
2. Not Alert – administer dextrose according to **MI-MEDIC** or
table above
- B. Check temperature and refer to **Pediatric Fever – Treatment Protocol**, if
applicable
- C. Monitor oxygenation and mental status, administer oxygen to maintain
94% SpO₂, including ventilatory support as needed according to the
Airway Management – Procedure Protocol
 - i. For patients with respiratory depression and high suspicion of opioid
involvement, administer **naloxone** per **Opioid Overdose
Treatment and Prevention – Treatment Protocol**
- D. Consider trauma; if evidence or suspicion of trauma, treat according to
applicable protocol
- E. Keep environment safe for the patient, padding around the patient if
possible

NOTES:

1. Instructions for diluting **dextrose**:
 - A. To obtain **dextrose** 10%, discard 40 ml out of one amp of D50, then draw up
40 ml of NS into the D50 ampule
 - B. To obtain **dextrose** 12.5%, discard 37.5 ml out of one amp of D50, then
draw 37.5 ml of NS into the D50 ampule
 - C. To obtain **dextrose** 25%, discard 25 ml out of one amp of D50, then draw
25 ml of NS into the D50 ampule
 - D. May utilize 10% for all ages 5 ml/kg (0.5 gm/kg) up to 250 ml, according to
Dextrose-Medication Protocol
2. To avoid extravasation, a patent IV must be available for IV administration of
dextrose. **Dextrose** should always be pushed slowly (e.g., over 1-2 minutes)

Medication Protocols

Dextrose
Glucagon
Midazolam
Naloxone

Safe Transportation of Children in Ambulances

Safe transportation of children in ambulances is very important. This protocol will serve as a guideline to the safe transportation of children in an ambulance. These are a limited set of circumstances that may not fit every situation.

Definitions:

1. Child Restraint System (CRS) is a device that is designed for child safety in any mode of transportation (e.g., vehicle, airplane, ambulance, etc.). This includes:
2. Vehicle CRS such as car seats that are used in personal vehicles (e.g., forward and rearward facing and booster seats
3. Ambulance Child Restraints (ACR) are a subset of CRS and are a specific type of child restraint system that is designed to be used in ambulances and on ambulance stretchers. ACR is not a brand name and devices that meet the definition of ACR and are approved by the MCA may be utilized.
 - a. An ACR does NOT include car seats that were designed for use in personal vehicles.

Criteria for Transport

1. This protocol applies pediatric patients who are of a height/weight that require the use of a CRS.
2. Any pediatric patient that requires a CRS that is transported in an ambulance **must be in an ACR.**
 - a. When not transported in an ACR, this must be documented as such and reported to the MCA.
3. This protocol is based on recommendations, as published by the National Highway Traffic Safety Administration (NHTSA), for the transportation of children in five possible situations:
 - a. The transport of a non-patient pediatric passenger, accompanying an injured or ill patient
 - b. The transport of a pediatric patient whose condition does *not* require continuous and/or intensive medical monitoring or intervention.
 - c. The transport of a pediatric patient who *does* require continuous and/or intensive monitoring or intervention.
 - d. The transport of a pediatric patient whose condition requires spinal motion restriction and/or lying flat, refer to **Spinal Precautions-Procedure Protocol**
 - e. The transport of a pediatric patient who require transport as part of a multiple patient transport (newborn with mother, multiple children, etc.)

Procedure

1. **Transport patient on ambulance stretcher secured with an ACR.**
2. The child's height and weight will be considered when determining an appropriate ACR, following manufacturers recommendations.
3. When use of ACR is unavailable, unachievable or is detrimental see situational guidelines below, document as such and report to the MCA.

Situation Guidelines: Alternatives for consideration during catastrophic situations when ACR use is unavailable or unachievable (must be documented as such and reported to the MCA). Follow in order of operation until an achievable transport method is arrived at.

1. Transport of an uninjured/not ill child accompanying an injured or ill patient (in this order)
 - a. Arrange for transport in a vehicle other than an emergency ground ambulance in a size-appropriate, properly installed, undamaged CRS.
 - b. Request an ACR equipped transporting vehicle.
 - c. Transport in an ambulance in the front passenger seat in a size-appropriate, properly installed, undamaged CRS. Airbags must off and seat moved to the furthest back position.
 - d. Transport in an ambulance in a forward-facing EMS provider's seat/ captain's chair, in a size-appropriate, properly installed, undamaged CRS.
 - e. Transport in an ambulance in rear-facing EMS provider's seat in a size-appropriate, properly installed, undamaged CRS.
2. Transport of an ill/injured child that does *not* require continuous intensive medical monitoring or interventions (in this order)
 - a. Request an ACR equipped transporting vehicle if patient's condition allows.
 - b. Transport the child in a size-appropriate undamaged CRS secured appropriately on ambulance stretcher.
 - c. Transport in the forward-facing EMS provider's seat/ captain's chair, in a size-appropriate, properly installed, undamaged CRS.
 - d. Transport in the rear-facing EMS provider's seat in a size-appropriate, properly installed, undamaged CRS.
 - e. Secure the child to the ambulance stretcher, using three horizontal restraints across the child's chest, pelvis, and lower extremities and one vertical restraint across each of the child's shoulders. The ambulance stretcher should be positioned (subject to the manufacturer's specifications) to provide for the child's comfort based upon the child's injuries and/or illness and to allow for appropriate medical care.
3. Transport of an ill/injured child who *does* require continuous intensive monitoring or intervention.
 - a. Request an ACR equipped transporting vehicle if patient's condition allows.
 - b. Secure the child to the ambulance stretcher, using three horizontal restraints across the child's chest, pelvis, and lower extremities and one vertical restraint across each of the child's shoulders. The ambulance stretcher should be positioned (subject to the manufacturer's specifications) to provide for the child's comfort based upon the child's injuries and/or illness and to allow for appropriate medical care.

4. Transport of an ill/injured child who requires spinal motion restriction or lying flat.
 - a. Request an ACR equipped transporting vehicle and follow **Spinal Precautions-Procedure Protocol**
 - b. If the child is already secured to a spine board and it is detrimental to remove the child from the device, ensure padding is added as needed and secure to the ambulance stretcher (i.e., extrication prior to arrival of transporting ambulance). See **Spinal Precautions-Procedure Protocol**.
5. Transport of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc.)
 - a. Transport each as a single patient according to the guidance provided for situations 1 through 4. Use additional units to accomplish safe transport.
 - b. For mother and newborn, both are considered patients.
 - i. Prevent hypothermia of the newborn immediately and continuously.
 - ii. Where the mother does not have complications arising from delivery, transport the newborn in an ACR on the ambulance stretcher and the mother in the rear-facing EMS provider seat.
 - iii. Where the mother has complications resulting from delivery and is in need of positioning on the ambulance stretcher, transport the newborn in an approved size-appropriate car seat in the rear-facing EMS provider seat with a belt-path that prevents both lateral and forward movement under continuous monitoring, securing the mother to the ambulance stretcher.

Protocol Source/References: National Highway Traffic Safety Administration. (2012). Working group best-practice recommendations for the safe transportation of children in emergency ground ambulances. <https://www.nasemso.org/Committees/STC/documents/NHTSA-Safe-Transportation-of-Children-in-Ambulances-2012.pdf>

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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 and 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.

1. Criteria: Patient $\leq$ 14 years of age

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, (cyanosis, severe retractions, head bobbing, grunting, respiratory rate extremes per age-adjusted normal MI-MEDIC), and/or signs and symptoms of shock/poor perfusion. (capillary refill greater than 3 seconds, tachycardia or hypotension per age-adjusted normal on MI-MEDIC).

b. Exclusion:

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

2. Critical Actions (within First 5 Minutes)

a. Airway

- i. Open airway manually. For child <2 years old, place padding under shoulders (align auditory meatus with sternal notch).
- ii. Insert nasopharyngeal or oropharyngeal Airway as indicated/tolerated if not following commands (GCS motor <6), as indicated/tolerated if GCS <9, 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. keep the patient calm and allow them to maintain a position of comfort, if possible.
- ii. Provide high-flow oxygen per the **Oxygen Administration-Procedure Protocol**.
 - A. 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.
 - B. If respirations are inadequate, ventilate by BVM at 15LPM. Administer ventilations guided by chest rise. Two-person, two-

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handed technique is most effective and is highly recommended if the number of providers allows.

-  iii. If respirations are >10 but inadequate, apply CPAP for respiratory distress/hypoxia if appropriate size CPAP available. Refer to **CPAP-Procedure Protocol** for age/size requirements.
- iv. Respirations may be assisted with BVM in sitting position if patient tolerates.
- v. Consider PPV by BVM if not following commands or SpO2 <90%
- vi. If respirations appear adequate, but the patient is not following commands or SpO2 persistently less than 90%, consider ventilation by BVM with 15LPM oxygen
- vii. Administer ventilations guided by chest rise. Two-person, two-handed technique is most effective and is highly recommended if the number of providers allows.

-  vii. Consider waveform capnography if appropriate per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**

c. Circulation

- i. Reference MI-MEDIC cards for age-adjusted expected blood pressure and heart rate ranges.
- ii. If bradycardic (HR <60), optimize ventilation/oxygenation. Refer to the **Pediatric Bradycardia-Treatment Protocol**.

-  iii. Emergent IV/IO access - Limit IV attempts to 2 total. For unresponsive or severely compromised pediatrics, IO can be the initial attempt.

d. Monitoring

- i. NIBP (cycle every 3 minutes)
-  ii. SpO2
-  iii. Continuous capnography per **End Tidal Carbon Dioxide-Procedure Protocol**.
-  iv. EKG

3. Immediate actions within First 10 Minutes

a. Circulation

-  i. If evidence of poor perfusion, administer **NS** or **LR** 20 mL/kg bolus (unless cardiogenic shock suspected i.e., JVD, hepatomegaly, abdominal distension, crackles, etc.).
-   A. If suspected cardiogenic shock, administer 5-10 mL/kg **NS** bolus instead and contact Medical Control.
-  ii. If dysrhythmia is thought to be primary cause of shock, contact Medical Control to discuss further interventions (electrical therapy with cardioversion or pacing, etc.).

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4. Actions within First 15 Minutes

- a. Re-assess response to treatments, including capillary refill with vital signs
 - i. Recheck vitals and listen to lungs following fluid bolus.
 -   A. If decreasing oxygen saturations, crackles, or worsening respiratory distress —STOP fluid bolus and contact Medical Control immediately.
 -  i. Consider starting vasopressors per **Shock-Treatment Protocol**.
- b. Circulation
 -  i. Repeat **NS** or **LR** 20 ml/kg bolus if indicated, maximum total dose 40 ml/kg.
 - ii. If bradycardia (HR <60), optimize ventilation/oxygenation and refer to the **Pediatric Bradycardia-Treatment Protocol**
 - iii. If no response to fluids, follow **Shock-Treatment Protocol**

5. Actions within First 20 Minutes

- a. Re-assess response to treatments
- b. Circulation
 -   i. Continue fluids as indicated by **Shock-Treatment Protocol** or contact Medical Control
 -   ii. Continue vasopressors (push-dose) as indicated by **Shock-Treatment Protocol** or contact Medical Control
- c. Airway
 - i. Insert advanced airway, if indicated and appropriate size available, 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.

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3. The concepts/actions listed can also be used in conjunction with the **Pediatric 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.

Cardiac Arrest – General

This protocol should be followed for adult cardiac arrests. Medical cardiac arrest patients undergoing attempted resuscitation should not be transported unless return of spontaneous circulation (ROSC) is achieved, transport is ordered by Medical Control, or otherwise specified in protocol.

- If an arrest is of a known traumatic origin, refer to the **Traumatic Arrest -Treatment Protocol**.
- If it is unknown whether the arrest is traumatic or medical, and the patient does not meet dead on scene criteria per **Dead on Scene Termination of Resuscitation-Procedure Protocol**, start CPR and continue with this protocol.
- If patient is hypothermic refer to **Hypothermia/Frostbite-Treatment Protocol** for warming techniques when applicable.
- Patients displaying a Do Not Resuscitate (DNR) order, bracelet, or necklace; or valid Michigan Physician Orders for Scope of Treatment (MI POST) – follow **DNR-Procedure Protocol** or **MI-POST-Procedure Protocol** accordingly.
- Cardiac arrest patients undergoing resuscitation should only be moved if the scene is unsafe, the physical location of the patient does not permit appropriate treatment, or under a direct medical control order.



HIGH QUALITY CPR & DEFIBRILLATION

Focus should be on prompt defibrillation and effective chest compressions.

- CPR and electrical therapy should be consistent with current American Heart Association guidelines. For all patients, **anterior/posterior placement** of pads is preferred and should be used, if possible, and if defibrillation not delayed.
- For all devices defibrillate with energy levels following manufacturers' recommendations.
 - If unknown use the maximum available

Excellent CPR is a priority:

- Keep pauses in CPR to a minimum by checking rhythm when rotating rescuer doing compressions and by avoiding pauses in CPR during airway management and other interventions. CPR pauses should be kept to less than 10 seconds.
- Use End Tidal Carbon Dioxide (ETCO₂) monitoring throughout resuscitation.
- CPR initial sequence is CAB (Compressions, Airway, Breathing), except in drowning or obvious respiratory cause which should use the ABC (Airway, Breathing, Compressions) sequence.
- Chest compression rate is 100 to 120/min.
- Chest compression depth for adults is 2 inches (5 cm)
- Compressions and ventilations in a ratio of 30:2
- Supraglottic airways are an acceptable primary advanced airway device (i.e., considered at least as good as endotracheal intubation) for patients in cardiac arrest with exceptions noted in the **Airway Management-Procedure Protocol**.

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- Transition to continuous compressions with asynchronous ventilations every 6 seconds after placement of an advanced airway.
- Allow complete chest recoil after each compression.
- Minimize interruptions in compressions. Reassess rhythm and pulses every 2 minutes or when prompted by defibrillator.
- Avoid hyperventilation.
- Minimize compression pauses during defibrillation by doing compressions while defibrillator is charging (if device allows) and restart compressions immediately after defibrillation.
- For pregnant patients, a rescuer should manually displace the uterus to the patient's left during CPR.
 - Pregnant patients may be difficult to ventilate due to increased intrabdominal pressure, monitor end tidal CO₂ and SpO₂
- Change rescuers doing compressions at least every 2 minutes to avoid fatigue.
- After advanced airway placement, and if personnel available, consider positioning 2 personnel (one each side) to quickly alternate in compressions (100 per person then alternate) without pauses.

OPERATIONAL CONSIDERATIONS

1. Prior to advanced airway placement, utilize ventilation periods to visualize the ECG rhythm without compression artifact, this will allow you to plan for the assessment period at the end of the two-minute CPR cycle.
2. If AED has been applied by BLS personnel, skip to appropriate place in protocol that incorporates previous care. ALS personnel should switch to manual defibrillator after initial AED defibrillation or place AED in manual mode.

PROCEDURE

1. Request additional assistance, as needed, and initiate ALS response, if available.
2. Confirm Arrest
 - a. Assess breathing (cardiac arrest patients may have gasping or agonal breathing).
 - b. Check a carotid/femoral pulse for not more than 10 seconds. If uncertain if pulse is present, initiate CPR.
 - c. Patients with Left Ventricular Assist Device (LVAD) **refer to LVAD- Procedure Protocol**
3. Initiate CPR or continue CPR; apply and use AED/defibrillator (per **Electrical Therapy-Procedure Protocol**) as soon as available.
 -  a. For refractory v-fib after 3 shocks, consider double sequential defibrillation per **Double Sequential Defibrillation-Procedure Protocol** (MCA Optional Protocol)
4. Ensure high quality CPR
 - a. Manual chest compressions remain the standard of care for the treatment of cardiac arrest. Mechanical chest compression devices may only be used as alternative to conventional CPR in specific settings where the delivery of high-quality manual compressions may be challenging or dangerous for the

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- provider (e.g., inadequate numbers of rescuers available, CPR during hypothermic cardiac arrest, CPR in a moving ambulance). See **Mechanical Chest Compression Device-Procedure Protocol** (MCA Optional Protocol)
 - b. An impedance threshold device may be utilized during CPR, if available. Device should be discontinued immediately upon return of spontaneous circulation. See **Impedance Threshold Device-Procedure Protocol** (MCA Optional Protocol)
 - c. An FDA-approved Active Compression-Decompression CPR device may be used, if available, in accordance with manufacturer's instruction for use and should be used in conjunction with an ITD (see **Active Compression-Decompression-Procedure Protocol**)
5. Establish a patent airway, maintaining C-Spine precaution if indicated, using appropriate airway adjuncts and high flow oxygen. See **Airway Management-Procedure Protocol**.
- a. Initiate bag-valve-mask ventilation
 - i. 2-person bag-valve-mask ventilation with oral airway should be used
 - ii. If only 2 rescuers, rescuer performing compressions can squeeze bag while 2nd rescuer maintains face to mask seal with both hands.
 - b. Consider advanced airway (supraglottic or endotracheal) placement without interrupting chest compressions to allow for continuous compressions.
 - i. Confirm placement through EtCO₂ and physical examination
 - ii. Ventilations delivered asynchronously at 10 breaths per minute or 1 breath every 6 seconds when using an advanced airway.
6. Reassess ABC's as indicated by rhythm or patient condition change. Pulse checks should take no more than 10 seconds. If no pulse after 10 seconds, assume pulselessness, continue CPR beginning with compressions.
7. Continuously monitor EtCO₂ per MCA selection in **End-Tidal Carbon Dioxide Monitoring-Procedure Protocol**.
- a. EtCO₂ of 0 is indicative of failed airway.
 - b. If EtCO₂ is <10 mmHG, attempt to improve CPR quality. If CPR quality good, may indicate futility state.
 - c. Monitor EtCO₂ for trends and indications of patient status.
-  8. Start an IV/IO **NS** or **LR KVO**. If IV is attempted and is unsuccessful, after 2 attempts start an IO line per **Vascular Access & IV Fluid Therapy-Procedure Protocol**.
- a. Give one liter **NS** or **LR** bolus, monitor for pulmonary edema. May repeat bolus as necessary to a maximum of 2 liters.
-  9. Administer **epinephrine** 1 mg/10 ml administering 1 mg IV/IO every 3 to 5 minutes.
-  10. Administer antidysrhythmic according to rhythm check
- a. For Ventricular Fibrillation (VF, pulseless Ventricular Tachycardia (VT), or multiple AED defibrillations, per MCA selection, administer **amiodarone** 300 mg IV/IO or **lidocaine** 1 mg/kg IV/IO

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Per MCA Selection

- ☒ **amiodarone** 300 mg IV/IO (May repeat once 150 mg IV/IO)
- ☐ **lidocaine** 1 mg/kg IV/IO (May repeat, every 5-10 minutes, 0.5 mg/kg, up to total dose of 3 mg/kg)

b. For suspected torsades de pointes administer **magnesium sulfate** 2 g IV/IO

11. Consider and treat reversible causes of cardiac arrest. NOTE: Sodium bicarbonate and calcium chloride are not to be routinely given in cardiac arrest UNLESS clear reason to suspect conditions below.

-  a. If known or highly suspected tricyclic antidepressant overdose, administer:
- i. **sodium bicarbonate** 1 mEq/kg IV/IO
-  b. If known or highly suspected hyperkalemia (e.g., dialysis patient, EKG changes) administer:
- i. **calcium chloride** (10%) 1 gm/10 mL IV/IO
- ii. FLUSH line with 20 mL **NS** between calcium chloride and sodium bicarbonate administration
- iii. **sodium bicarbonate** 1 mEq/kg IV/IO
-  c. Assess for tension pneumothorax or misplaced ETT:
- i. If tension pneumothorax suspected, perform needle decompression per **Pleural Decompression-Procedure Protocol**.
-  d. If known or highly suspected opioid overdose
- i. Patent airway and adequate ventilation takes precedence over pharmacological interventions.
- ii. Consider **naloxone** 2 mg IV/IO or 2-4 mg IN refer to **Opioid Overdose Treatment and Prevention-Treatment Protocol**

12. If sustained ROSC is achieved refer to **Return of Spontaneous Circulation-Treatment Protocol**

- a. Reassess for ROSC (check pulses) if EtCO₂ abruptly increases by more than 10 mmHg.

 13. If ROSC is not achieved, continue resuscitation while contacting Medical Control

-  a. **BLS/LALS**: If ROSC has not been achieved and ALS is not available or is delayed, contact Medical Control after **20 minutes** of high-quality CPR for further direction AND before initiating transport. Continue high quality CPR unless directed otherwise by Medical Control per **Dead on Scene & Termination of Resuscitation Protocol**.
-  b. **ALS**: If ROSC is not present after **30 minutes of ALS time** contact Medical Control for further direction AND before initiating transport.
- c. Continue high quality CPR unless directed otherwise by Medical Control per **Dead on Scene & Termination of Resuscitation Protocol**.

Notes:

1. Chest Compression Fraction (CCF) is the proportion of time during cardiac arrest when compressions are being performed. CCF should be as high as possible, ideally greater than 80% [American Heart Association, ACLS (2020), pg.115].

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2. Document tube placement confirmation by EtCO₂ and by auscultation as described above and/or use of other MCA approved secondary confirmation device.
-  3. Identify and communicate to Medical Control potentially reversible causes. Treat EMS reversible causes, using other protocols, as applicable.
 - A. Hyper/hypokalemia (known renal failure), other metabolic disorders
 - B. Hypothermia
 - C. Hypovolemia (including vomiting/diarrhea)
 - D. Hypoxia
 - E. Hydrogen ion excess (acidosis)
 - F. Toxins/ overdose (e.g., beta-blocker or calcium channel-blocker)
 - G. Tamponade
 - H. Tension pneumothorax
 - I. Thrombosis (pulmonary or coronary)
4. Routine use of **sodium bicarbonate** and **calcium chloride** in cardiac arrest is not indicated.
5. If ROSC is achieved refer to **Return of Spontaneous Circulation -Treatment Protocol**
 - A. Where available transport to an interventional cardiac catheterization facility, per MCA Transport Protocol

Medication Protocols:

Amiodarone

Calcium Chloride

Epinephrine

Lidocaine

Magnesium Sulfate

Naloxone

Sodium Bicarbonate

Protocol Source/References: Highlights of the 2020 AHA Guidelines Update for CPR and ECC

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Bradycardia

This protocol is for paramedic use only

This is a protocol for patients with serious symptomatic bradycardia, defined as patients with heart rate less than 60 bpm and hypotension, or shock. Titrate treatments to a heart rate above 60 bpm. If the patient remains hypotensive, refer to the **Shock Treatment Protocol**.

1. Follow the **General Pre-Hospital Care-Treatment Protocol**.
2. Administer **atropine** 1 mg IV/IO rapid push repeating every 3-5 minutes to a total dose of 3 mg IV/IO, until a heart rate of greater than 60/minute is reached.
3. Transcutaneous pacing (TCP) when available may be initiated prior to establishment of IV access and/or before **atropine** begins to take effect. Pacing is the treatment of choice for high degree A-V block (second-degree Type II, or third-degree), apply pacer pads. Follow the **Electrical Therapy- Procedure Protocol**.
4. Per MCA selection, provide sedation per **Patient Procedural Sedation-Procedure Protocol**
5. For patients with persistent symptomatic bradycardia, administer **epinephrine** by push dose (dilute boluses)
 - a. Prepare (10 mcg/mL) by adding 1mL of 1mg/10mL **epinephrine** in 9mL **NS**, then:
 - i. Administer 10-20 mcg (1-2 mL **epinephrine** 10 mcg/mL) IV/IO
 - ii. Repeat every 3 to 5 minutes
 - iii. Titrate SBP greater than 90 mmHg

Notes:

1. Consider possible etiologies:
 - A. Hyper/hypokalemia, other metabolic disorders
 - B. Hypothermia
 - C. Hypovolemia (including vomiting/diarrhea)
 - D. Hypoxia
 - E. Hydrogen ion excess (acidosis)
 - F. Toxins/ overdose (e.g., beta-blocker or calcium channel-blocker)
 - G. Tamponade
 - H. Tension pneumothorax
 - I. Thrombosis (pulmonary or coronary)
2. Transcutaneous pacemaker electrode pads may be applied to these patients without initiating pacing so that the pacemaker is ready if patient condition deteriorates.
3. For symptomatic high-degree (second-degree Type II, or third-degree) AV block, begin pacing without delay.
4. Heart transplant patients may not respond to **atropine**

Medication Protocols

Atropine

Epinephrine

Protocol Source/References: Highlights of the 2020 AHA Guidelines Update for CPR and ECC

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 1/10/24

MCA Implementation Date: 3/25/24

MDHHS Approval Date: 5/25/23

MDHHS Reviewed 2023

**Tachycardia***This protocol is for paramedic use only*

Aliases: Supraventricular Tachycardia (SVT), Ventricular Tachycardia (VT or V-Tach), Atrial Fibrillation with Rapid Ventricular Response (A-Fib with RVR)



- This protocol is used for the care of patients with persistent tachycardia (ventricular rate greater than or equal to 150/minute) where the tachycardia is believed to be the primary cause of the patient's symptoms.
- For rates <150, believed to be causing symptoms, contact Medical Control for possible orders. It is not intended to treat tachycardia that is secondary to underlying conditions (i.e., dehydration, trauma, sepsis, or toxins). Consultation with online medical control should be considered for complex patients in whom the cause of the arrhythmia is not obvious.
- Unstable patients may be defined as those with a tachycardia with: hypotension, acutely altered mental status, signs of shock, significant ischemic chest discomfort, shortness of breath, or pulmonary edema that is likely due to the arrhythmia. Unstable patients will usually have a ventricular rate ≥150 BPM.
- Note: Unstable patients with compensatory sinus tachycardia may resemble tachycardic arrhythmias but should not be treated as such. Treat underlying cause.
- **Adenosine** is only used for regular monomorphic tachycardic rhythm

1. Follow the **General Pre-Hospital Care-Treatment Protocol**.
2. Identify and treat reversible causes.
3. Determine if patient is stable or unstable.

UNSTABLE

1. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion per **Patient Procedural Sedation-Procedure Protocol**
2. Electrical cardioversion
 - a. Perform synchronized cardioversion according to manufacturer recommendations.
 - b. If unable to deliver synchronized cardioversion in polymorphic V Tach (including Torsades), defibrillate (cardiovert without synchronization) according to manufacturer recommendations (or device maximum energy dose)
 -  c. Contact medical control if the patient does not convert at maximum energy, for additional orders.

STABLE (But Symptomatic)

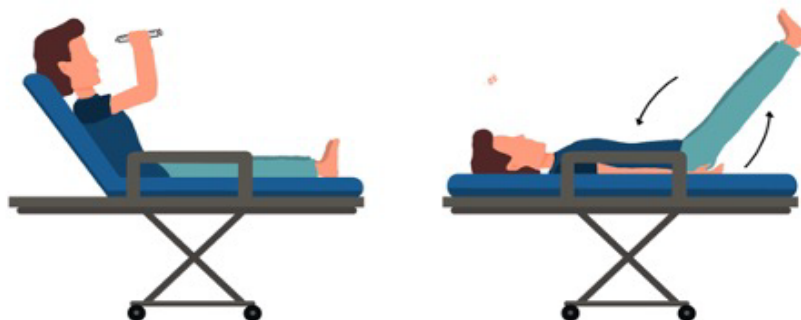
1. If at any point a patient becomes unstable, go to UNSTABLE section, and perform synchronized cardioversion.
2. Start an IV **NS KVO**. A large bore antecubital IV is preferred.
3. Obtain 12 lead ECG
-  4. Contact Medical Control for guidance as needed.

NARROW COMPLEX

REGULAR AND NARROW rhythm (i.e., SVT, A-flutter)

1. Perform Valsalva Maneuver with Postural Modification
 - a. Provide continuous cardiac monitoring
 - b. Run ECG strip during the procedure.
 - c. **DO NOT PERFORM CAROTID MASSAGE.**
 - d. Perform Valsalva Maneuver with Postural Modification (see Figure below)
 - i. Place the patient in a semi-fowlers position
 - ii. Instruct the patient to forcefully blow into a 10 mL syringe for 15 second
 - iii. Then rapidly lower the patient's head to the horizontal position while simultaneously elevating the patient's legs for 60 seconds.

Modified Valsalva Maneuver



Step 1: Patient forcefully blows into 10 mL syringe while semi-recumbent (~45°)

Step 2: Patient rapidly laid back while simultaneously raising lower extremities.

2. For suspected SVT that doesn't convert with Valsalva consider **adenosine** 6 mg rapid IV push through the most proximal injection site. This should be followed immediately with 20 ml **NS** flush.
 - a. Adenosine may allow flutter waves to be visible indicating A-Flutter and should be treated as **IRREGULAR AND NARROW** rhythm below.
 - b. If conversion does not occur, administer **adenosine** 12 mg IV using the same technique as stated above.
3. If SVT persists, treat according to MCA selection below.

Medication per MCA Selection

- ☐ **diltiazem** 15-20 mg (0.25 mg/kg) IV slowly
- ☐ **verapamil** 5 mg IV
- ☒ No medication, supportive therapy only

- ☐ Contact Medical Control prior to medication administration.
- ☐ Medication administration without Medical Control Contact

4. For suspected A-Flutter treat as IRREGULAR AND NARROW rhythm as below.

IRREGULAR AND NARROW rhythm (i.e., A-Fib/A-Flutter)

1. For suspected A-Fib/A-Flutter (per MCA selection), and if applicable, consider administration as below with Medical Control contact if indicated per MCA selection.
2. Note: treatment is indicated if heart rate is persistently above 125 BPM AND patient is

Medication per MCA Selection

- ☐ **diltiazem** 15-20 mg (0.25 mg/kg) IV slowly
- ☐ **verapamil** 5 mg IV
- ☒ **amiodarone** 150 mg IV over 10 minutes
- ☐ No medication, supportive therapy only

- ☒ Contact Medical Control prior to medication administration.
- ☐ Medication administration without Medical Control Contact

Symptomatic from arrhythmia (consider dehydration, hypovolemia, etc., for causes).

WIDE COMPLEX

REGULAR WIDE QRS rhythm (i.e., V-Tach, SVT/A-Flutter with aberrancy)

1. For suspected V-Tach administer **amiodarone** or **lidocaine** per MCA Selection.

Per MCA Selection

- ☒ **amiodarone** - 150 mg IV over 10 minutes
- ☐ **lidocaine** - 1 mg/kg IV

Initial Date: 11/15/2012

Revised Date: 7/28/23

Section 5-3



2. If V-Tach persists contact Medical Control and per Medical Control direction, administer:
 - a. **amiodarone** 150 mg IV over 10 minutes as needed to a maximum of 450 mgOR
 - b. **lidocaine** 0.5 -1.0 mg/kg IV push every 5 - 10 minutes to a maximum of 3 mg/kg.
3. For suspected SVT with aberrancy treat as REGULAR AND NARROW rhythm as above.
4. For suspected A-Flutter with aberrancy treat as IRREGULAR AND NARROW rhythm as above.

IRREGULAR WIDE QRS rhythm (i.e., torsades or A-Fib with aberrancy).

1. For suspected torsades administer **magnesium sulfate** 2 gm IV over 10 minutes.
2. For suspected atrial fibrillation with aberrancy follow irregular and narrow complex treatment as above.

NOTES:

1. Administration of **amiodarone** is best accomplished by adding **amiodarone** 150 mg to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
2. Administration of Magnesium Sulfate is best accomplished by adding **magnesium sulfate** 2 gm to 100 or 250 ml of **NS** and infusing over approximately 10 minutes.
3. Wide complex regular tachycardia may represent SVT with aberrancy, contact Medical Control and consider **adenosine**.

Medication Protocols

Adenosine

Amiodarone

Diltiazem

Lidocaine

Magnesium Sulfate

Verapamil

Protocol Source/References: REVERT Trial <https://www.ecgmedicaltraining.com/wp-content/uploads/2016/06/REVERT-Trial-SVT.jpg>

Pulmonary Edema/Cardiogenic Shock

This protocol is to be followed for patients in respiratory distress due to pulmonary edema with or without hypotension (i.e., CHF/fluid overload or Cardiogenic Shock). Pulmonary edema usually presents with crackles which should be continuously evaluated as they may evolve with treatments.

1. Follow **General Pre-Hospital Care-Treatment Protocol**.
2. Initiate supplemental oxygen by non-rebreather mask.
3. Position patient upright with legs dependent, if possible.
4. Consider CPAP per **CPAP-Procedure Protocol**
5. Establish IV access without delaying treatment per **Vascular Access & IV Fluid Therapy-Procedure Protocol**.
6. If wheezing, 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

7. If crackles (with or without wheezing) administer **nitroglycerin** as outlined below.
 - a. Inquire of all patients regardless of identified gender if they have taken an erectile dysfunction medication or medications used to treat pulmonary hypertension in the last 48 hours.
 - i. If yes, **DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL**.
 - b. Prior to IV administration if no erectile dysfunction medication and systolic BP is above 120 mmHG, **nitroglycerin** 0.4mg sublingual may be administered up to a maximum of 3 doses.
 - c. If SBP above 100 mmHg (with IV/IO in place), administer **nitroglycerin** 0.4 mg SL, repeat every 3-5 minutes if SBP remains above 100 mmHg.
 - d. If wheezing continues, continue **nitroglycerin** 0.4 mg SL and consider: **albuterol/ipratropium bromide** per **Respiratory Distress-Treatment Protocol**
8. If SBP is below 100 mmHG treat for cardiogenic shock.
 - a. Prepare (**epinephrine** 10 mcg/mL) by combining 1mL of 1mg/10mL **epinephrine** in 9mL **NS**
 - i. Administer 20 mcg (2 mL **epinephrine** 10 mcg/mL) IV/IO
 - ii. Repeat every 3-5 minutes
 - iii. Titrate SBP greater than 90 mm/Hg.
9. If indicated, consider an advanced airway see **Airway Management-Procedure Protocol**.
10. Obtain 12-lead ECG (May be a BLS or Specialist skill, per MCA selection, see **12 Lead ECG-Procedure Protocol**). Follow MCA transport protocol if ECG is positive for ST segment elevation myocardial infarction (STEMI) and alert hospital as soon as possible.

Initial Date: 11/15/2012

Revised Date: 06/03/2023

Section 5-4

Medication Protocols

Albuterol

Epinephrine

Nitroglycerin

Initial Date: 11/15/2015
Revised Date: 11/17/2025

Section 5-5

Chest Pain/Acute Coronary Syndrome

The goal is to reduce cardiac workload and to maximize myocardial oxygen delivery by reducing anxiety, appropriately oxygenating, and relieving pain. For non-cardiac causes of chest pain, refer to appropriate protocol which may include **Pain Management-Procedure Protocol**.

1. Follow **General Pre-Hospital Care Protocol**.
-  2. Obtain 12-lead as early as possible without delaying medication administration. (Per MCA selection, may be a BLS or Specialist procedure, follow **12 Lead ECG Procedure-Protocol**)
3. Administer oxygen 4 L/min by nasal cannula if SpO2 < 94%.
4. Assist patient in the use of their own **aspirin** up to a dose of 325 mg and per formulation (chew, swallow, etc.).
-  5. Administer **aspirin** up to 325 mg PO, chew and swallow, if no aspirin or suspected insufficient dose since the onset of chest pain. (Per MCA selection may be MFR and/or EMT skill)

Aspirin Administration



MFR



EMT

6. Inquire of all patients, regardless of identified gender, if they have taken an erectile dysfunction medication or medications used to treat pulmonary hypertension in the last 48 hours.
 -  a. If yes, DO NOT ADMINISTER/ ASSIST WITH NITROGLYCERIN AND CONTACT MEDICAL CONTROL.
-  7. Consider **fentanyl** early when nitroglycerin is contraindicated due to erectile dysfunction medication (see 14 below for **fentanyl** administration).
-  8. If no erectile dysfunction medication, systolic BP is above 120 mmHG and patient has **nitroglycerin** sublingual tabs prescribed to them available (check expiration date) assist patient in use of their own nitroglycerin, up to a maximum of 3 doses.
-  9. Prior to IV administration, if no erectile dysfunction medication and systolic BP is above 120 mmHG, **nitroglycerin** 0.4mg sublingual may be administered up to a maximum of 3 doses. (Per MCA selection may be EMT skill)

Nitroglycerin Administration



EMT

-  10. Start an IV **NS** or **LR** KVO per **Vascular Access and IV Fluid Therapy-Procedure Protocol**.
-  11. If the patient has a SBP of less than 100 mmHg:
 - a. Administer 250 ml fluid bolus. May repeat 3 times for a total of 1 liter.
 - b. Between boluses assess patient response and monitor for pulmonary edema.
 -  c. If pulmonary edema is noted, stop fluids and contact Medical Control.

Michigan
ADULT CARDIAC
CHEST PAIN/ACUTE CORONARY SYNDROME

Initial Date: 11/15/2015

Revised Date: 11/17/2025

Section 5-5

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- ① 12. If no erectile dysfunction medication, IV has been established, and systolic BP is above 100 mmHG, administer **nitroglycerin** 0.4 mg sublingual. Dose may be repeated at 3-to-5-minute intervals if chest pain persists and systolic BP remains above 100 mmHg.
 - ① 13. Obtain 12-lead ECG (Per MCA selection, may be a BLS or Specialist procedure, follow **12 Lead ECG Procedure-Protocol**). Follow local MCA transport protocol if ECG is positive for acute ST Elevation Myocardial Infarction (STEMI) and alert the hospital as soon as possible.
 - ① 14. For patients with suspected cardiac chest pain refractory to **nitroglycerin**, or **nitroglycerin** is contraindicated due to erectile dysfunction medication, consider **fentanyl** administration:
 - a. Administer 1 mcg/kg IV/IO/IM/IN dosage rounded as per below:
 - a. Up to and including 25 kg - administer 25 mcg
 - b. 26-50 kg – administer 50 mcg
 - c. 51-75 kg - administer 75 mcg
 - d. 76 kg and above – administer 100 mcg
 - e. IV/IO/IN may repeat one-time, total dose may not exceed 200 mcg
 - f. If IM administration may NOT repeat

Medication Protocols: Aspirin, Fentanyl, Nitroglycerin

Return of Spontaneous Circulation (ROSC)

This protocol should be followed for all cardiac arrests with ROSC. If an arrest is of a known traumatic origin, refer to the **Traumatic Arrest -Treatment Protocol** and MCA Transport Protocol. If it is unknown whether the arrest is traumatic or medical, consider other treatable causes. Initiate ALS response if available. After ROSC, patients should be stabilized on scene prior to transport, for five to ten minutes before moving the patient. Refer to **Crashing Adult /Impending Arrest-Treatment Protocol**.

1. If ventilation assistance is required, ventilate at 10-12 breaths per minute. Do not hyperventilate.
2. Monitor vital sign and reassess patient. If patient becomes pulseless begin CPR and refer to **Adult Cardiac Arrest General-Treatment Protocol**.
-  3. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**)
-  4. Start an IV/IO **NS** or **LR KVO** if not already in place.
-  5. Treat hypotension (systolic blood pressure less than 90 mm/Hg) with an IV/IO fluid bolus of up to 1 liter.
-  6. Perform 12- lead ECG (Per MCA selection, may be BLS or Specialist skill per **12 Lead ECG-Procedure Protocol**)
-  7. Consider Transport to a facility capable of Percutaneous Coronary Intervention (PCI) per MCA protocol if 12 Lead ECG indicates ST Elevation MI.
-  8. Monitor waveform ETCO₂. If ventilation assistance is required, target ETCO₂ of 35-45 mm Hg per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**
-  9. If hypotension persists after initial IV/IO fluid bolus, prepare push dose **epinephrine** while administering second 1 liter fluid bolus (maximum total fluid 2 liters)
-  10. Administer **epinephrine** by push dose (dilute boluses).
 - a. Prepare (10 mcg/mL) by adding 1mL of 1mg/10mL **epinephrine** in 9mL NS, then:
 - i. Administer 10-20 mcg (1-2 mL **epinephrine** 10 mcg/mL)
 - ii. Repeat every 3 to 5 minutes
 - iii. Titrate to SBP greater than 90 mm/Hg
11. Anticipate airway intolerance and prepare for patient sedation. If patient becomes agitated with advanced airway in place, refer to **Patient Procedural Sedation-Procedure Protocol**.

Notes:

1. If a mechanical ventilator is available or there are spontaneous respirations in the non-intubated patient, titrate inspired oxygen on the basis of monitored SpO₂ to maintain a saturation of ≥92% but <98%. Titrate ETCO₂ between 35-45 mmHg.
2. Consider removal of airway device only if wide awake, following commands, and unable to tolerate airway device.

Medication Protocols

Epinephrine

Initial Date: 08/09/2017
Revised Date: 06/06/2023

Section 6-1

Pediatric Cardiac Arrest – General

This protocol should be followed for all pediatric cardiac arrests.

- If an arrest is of a known traumatic origin refer to the **Traumatic Arrest-Treatment Protocol**.
- If it is unknown whether the arrest is traumatic or medical, and the patient does not meet dead on scene criteria per **Dead on Scene Termination of Resuscitation-Procedure Protocol**, start CPR and continue with this protocol.
- If patient is hypothermic refer to **Hypothermic/Frostbite-Treatment Protocol** for warming techniques when applicable.

Note: Primary cardiac arrest in the pediatric patient is rare. Most arrests are secondary to respiratory failure. Maintaining basic airway management techniques unless unable or ineffective. Advanced airway insertion attempts should be performed only if BLS airway management is ineffective. Keep CPR interruptions to a minimum. Medications given during cardiac arrest are given IV or IO.

HIGH QUALITY CPR & DEFIBRILLATION

- CPR and electrical therapy should be consistent with current American Heart Association guidelines. For all patients, **anterior/posterior placement** of pads is preferred and should be used, if possible, and if defibrillation not delayed.
- Once arrest is confirmed, emphasis should be on avoiding interruptions in CPR.
- CPR should be done in accordance with current guidelines established by the American Heart Association.
- Compressions at least 1.5" in depth for infants, 2" in depth for children (at least one third the anteroposterior diameter of the chest).
- Compression rate of at least 100-120 per minute
- Allow full chest recoil with each compression for maximum perfusion.
- Avoid excessive ventilation (volume and rate).
- Continue CPR with minimal interruptions, changing the rescuer doing compressions
- Verify CPR quality frequently and any time rescuer providing compressions or ventilations change.
- Change rescuer performing compressions at least every 2 minutes to avoid fatigue.
- Interruption in compressions must be less than 10 seconds
- If an advanced airway is placed, provide continuous CPR, without pauses for ventilation and ventilate at 20 breaths per minute or 1 breath every 3 seconds

OPERATIONAL CONSIDERATIONS

1. Prior to advanced airway placement, utilize ventilation periods to visualize the ECG rhythm without compression artifact, this will allow you to plan for the assessment period at the end of the two-minute CPR cycle.
2. If AED has been applied by BLS personnel, skip to appropriate place in protocol that

Initial Date: 08/09/2017

Revised Date: 06/06/2023

Section 6-1

incorporates previous care. ALS personnel should switch to manual defibrillator after initial AED defibrillation or place AED in manual mode.

PROCEDURE

1. Request additional assistance, as needed, and initiate ALS response, if available.
2. Confirm Arrest
 - a. Assess for signs of normal breathing. Agonal breathing is associated with cardiac arrest.
 - b. Check a carotid or brachial pulse as age appropriate for no more than 10 seconds.
3. Initiate CPR or continue CPR if already in progress and apply and use AED/manual defibrillator per **Electrical Therapy-Procedure Protocol** as soon as possible. Use AED pediatric pads and settings per AED manufacturer instructions for use.
4. Ensure CPR quality
 - a. Manual chest compressions remain the standard of care. Mechanical chest compression devices may be a reasonable alternative to conventional CPR in specific settings where the delivery of high quality manual compression may be challenging or dangerous for the provider (e.g., limited rescuers, prolonged CPR, CPR during hypothermic cardiac arrest, CPR in a moving ambulance). An FDA approved, MCA authorized mechanical CPR device operating at the manufacturer's pre-set rate may be utilized. See **Mechanical Chest Compression Device-Procedure Protocol** for age/weight requirements and limitations. (MCA Optional)
 - b. An impedance threshold device may be utilized during CPR for children > 10kg (if available). Device should be discontinued immediately upon return of spontaneous circulation. See **Impedance Threshold Device-Procedure Protocol** (MCA Optional Protocol)
5. Establish a patent airway, maintaining C-Spine precautions if indicated, beginning with BLS airway adjuncts and a BVM with high flow oxygen. Ventilations with BVM (2-rescuer technique) and airway adjuncts are at least as effective as endotracheal intubation in children.
 - a. 2-person bag-valve-mask ventilation with oral airway should be standard technique
 - b. If only 2 rescuers, rescuer performing compressions can squeeze bag while 2nd rescuer maintains face to mask seal with both hands
 - c. If unable to ventilate or unable to maintain a patent airway, establish an advanced airway per the **Airway Management-Procedure Protocol**. (Supraglottic airways are first choice advanced airway for pediatrics when age approved sizes are available)
 - i. All advanced airways (includes supraglottic) require EtCO₂ monitoring.
-   6. If Return of Spontaneous Circulation (ROSC) has **not** been achieved after three, two-minute cycles of CPR AND ALS is not available or delayed, contact Medical Control to discuss initiation of BLS transport while continuing to focus on high quality CPR.
7. Reassess ABC's as indicated by rhythm or patient condition change. Pulse checks should take no more than 10 seconds. If no pulse after 10 seconds, assume pulselessness, continue CPR beginning with compressions.

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Revised Date: 06/06/2023

Section 6-1

8. Continuously monitor EtCO₂ per MCA selection in End-Tidal Carbon Dioxide Monitoring-Procedure Protocol.
 - a. EtCO₂ of 0 is indicative of failed airway.
 - b. If EtCO₂ is <10 mmHG, attempt to improve CPR quality. If CPR quality good, may indicate futility state.
 - c. Monitor EtCO₂ for trends and indications of patient status.
9. Start an IV/IO **NS** or **LR** KVO. IO may be the first choice. See **Vascular Access & IV Fluid Therapy-Procedure Protocol**.
10. Check rhythm, every 2 minutes, defibrillate according to MI MEDIC card. If MI MEDIC are not available:
 - a. Initial defibrillation at 2 J/kg (or closest energy setting specific to defibrillator being utilized), and continue CPR.
 - b. Subsequent defibrillations must be at least 4 J/kg, but may escalate to 10J/kg or adult dosage.
11. Administer **epinephrine** according to MI MEDIC cards.
 - a. Initial dose should ideally be administered within 5 minutes of ALS/LALS contact of confirmed pediatric cardiac arrest.
 - b. If MI MEDIC cards are not available administer:
 - i. 1 mg/10 ml, 0.01 mg/kg (0.1 ml/kg)
 - ii. Max dose 1mg (10 ml)
 - iii. Repeat every 3-5 minutes
12. If shockable rhythm persists administer antiarrhythmic (per MCA selection) according to MI MEDIC cards.
 - a. If MI MEDIC cards are not available administer antiarrhythmic (per MCA selection) as follows:

Per MCA Selection

- ☒ **Amiodarone** 5 mg/kg (max single dose 300 mg) IV/IO (May repeat twice) Do not exceed 450 mg total IV/IO
- or
- ☐ **Lidocaine** 1 mg/kg IV/IO (May repeat 0.5 mg/kg twice at 5-10 minute intervals. Maximum 3 doses total)

13. Identify and treat reversible causes of arrest
 - a. Hypovolemia (including vomiting/diarrhea)– Administer 20 ml/kg **NS** or **LR** IV/IO bolus
 - b. Hypoglycemia – check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**)
 - i. If blood glucose is less than 60 mg/dL administer dextrose according to MI MEDIC cards.
 - ii. If MI-MEDIC unavailable, administer **dextrose** 0.5 g/kg per Pediatric Altered Mental Status.
 - c. Tension pneumothorax – see **Pleural Decompression-Procedure Protocol**
 - d. Hyperkalemia (renal failure) – Contact Medical Control
 - i. Administer **calcium chloride 10%** per MI MEDIC cards
 1. If MI MEDIC cards are unavailable administer 20 mg/kg (0.2 ml/kg), max single dose 1 gm

Initial Date: 08/09/2017
Revised Date: 06/06/2023

Section 6-1

- ii. FLUSH line with 20 mL **NS** between calcium chloride and sodium bicarbonate administration.
- iii. Administer **sodium bicarbonate** per MI MEDIC cards
 - 2. If MI MEDIC cards are unavailable administer 1 mEq/kg IV/IO
- 5. If ROSC is not achieved, continue resuscitation while contacting Medical Control
 -  a. **BLS/LALS:** If ROSC has not been achieved and ALS is not available or is delayed, contact Medical Control after **20 minutes** of high-quality CPR for further direction AND before initiating transport. Continue high quality CPR unless directed otherwise by Medical Control per **Dead on Scene & Termination of Resuscitation Protocol**.
 -  b. **ALS:** If ROSC is not present after **30 minutes of ALS time** contact Medical Control for further direction AND before initiating transport.
 - c. Continue high quality CPR unless directed otherwise by Medical Control per **Dead on Scene & Termination of Resuscitation Protocol**.

Notes:

- 1. Chest Compression Fraction (CCF) is the proportion of time during cardiac arrest when compressions are being performed. CCF should be as high as possible: ideally greater than 80% (AHA, ACLS, pg.115)
-  2. Identify and communicate to Medical Control potentially reversible causes. Treat EMS reversible causes, using other protocols, as applicable.
 - A. Hyper/hypokalemia (known renal failure), other metabolic disorders
 - B. Hypothermia
 - C. Hypovolemia (including vomiting/diarrhea)
 - D. Hypoxia
 - E. Hydrogen ion excess (acidosis)
 - F. Toxins/ overdose (e.g., beta-blocker or calcium channel-blocker)
 - G. Tamponade
 - H. Tension pneumothorax
 - I. Thrombosis (pulmonary or coronary)
- 3. Routine use of **sodium bicarbonate** and **calcium chloride** in cardiac arrest is not indicated.
- 4. If ROSC is achieved refer to **Pediatric Return of Spontaneous Circulation - Treatment Protocol**

Medication Protocols

Amiodarone
Calcium Chloride
Dextrose
Epinephrine
Lidocaine
Sodium Bicarbonate

Initial Date: 5/31/2012

Revised Date: 12/30/2022

Section: 6-2

**Pediatric Bradycardia***This protocol is for paramedic use only***Aliases: Slow heart rate, heart block**

Bradycardia should be considered to be due to hypoxia until proven otherwise. This protocol applies to pediatric patients with bradycardia, a pulse, and poor perfusion (cardiopulmonary compromise).

NOTES: Signs of cardiopulmonary compromise include:

1. Hypotension:
 - a. In neonates, SBP less than 60
 - b. In infants 1 month to 1 year, SBP less than 70
 - c. In children aged 2 to 10 years, SBP less than $70 + (\text{age} \times 2)$.
 - d. For children greater than 10, SBP less than 90
2. Acutely altered mental status.
3. Signs of shock - indicated by absent and/or weak peripheral and femoral pulses, increased capillary refill time (> 3 seconds), skin cool/mottled.
4. Respiratory difficulty indicated by increased work of breathing (retractions, nasal flaring, grunting, tracheal tugging), cyanosis, altered level of consciousness (unusual irritability, lethargy, failure to respond to parents), stridor, wheezing.

General Treatment

- A. Pediatric patients (≤ 14 years of age) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
- B. Manage airway as necessary
- C. Provide supplemental oxygen as needed to maintain O₂ saturation $> 94\%$
- D. Initiate monitoring
 1. If pulse is < 60 confirm and support adequate oxygenation and ventilation.
 2. If pulse remains < 60 and patient remains symptomatic perform CPR
 3. Establish vascular access
 4. Apply cardiac monitor to identify rhythm
 5. If pulse remains < 60 , despite oxygenation & ventilation
 - A. Administer **epinephrine** according to MI MEDIC cards.
 - i. If MI MEDIC cards are not available administer **epinephrine**:
 1. 1mg/ 10mL,
 2. 0.01 mg/kg (0.1 ml/kg) IV/IO up to 1 mg (10 ml),
 3. Repeat every 3-5 minutes.
 - B. If patient remains unstable and pulse < 60 administer **atropine** according to MI MEDIC cards.
 - i. If MI MEDIC cards are not available administer **atropine**:

Michigan
PEDIATRIC CARDIAC PROTOCOLS
PEDIATRIC SYMPTOMATIC BRADYCARDIA

Initial Date: 5/31/2012

Revised Date: 12/30/2022

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1. 0.02 mg/kg IV/IO (minimum dose 0.1 mg, maximum single dose 0.5 mg)
2. May repeat once in 5 minutes, if effective.
 - ii. Continue administration of epinephrine as above
6. If patient remains unstable and pulse <60 after **epinephrine** and **atropine** administration:
 - i. Begin transcutaneous pacing at rate up to 100 bpm per **Electrical Therapy-Procedure Protocol**.
 - ii. Sedation may be used to facilitate transcutaneous pacing per MCA selection. Refer to **Patient Procedural Sedation-Procedure Protocol**.
7. Continuously monitor for pulses. If pulse is not present, refer to **Pediatric Cardiac Arrest-Treatment Protocol**.
8. Ensure adequate patient warming.

Notes:

When CPR is required, a precise diagnosis of the specific bradyarrhythmia is not important.

Medication Protocols

Atropine

Epinephrine

Pediatric Tachycardia



This protocol is for paramedic use only

This protocol is intended for symptomatic pediatric patients with elevated heart rate, relative to their age. Refer to MI-MEDIC for appropriate vital signs and medication doses.

1. Follow General Pre-Hospital Care-Treatment Protocol
2. Determine if patient is stable or unstable
3. Manage airway as necessary
4. Provide supplemental oxygen as needed to maintain O2 saturation > 94%
5. Initiate monitoring
6. Perform 12-lead EKG but do not delay care for 12-lead EKG on unstable patients
7. Establish vascular access
8. Pediatric patients (≤ 14 years of age), utilize MI MEDIC cards for appropriate medication dosage. When unavailable, utilize pediatric dosing listed within protocol.
9. Identify and treat underlying causes of tachycardia such as dehydration, fever, vomiting, sepsis and pain.
10. Administer **NS** or **LR** bolus 20ml/kg with possible hypovolemia.
11. Consider the following additional therapies if specific dysrhythmias are recognized, based on patient condition.

UNSTABLE

1. Regular Narrow Complex Tachycardia – Unstable
 - a. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion. Refer to **Patient Procedural Sedation-Procedure Protocol**.
 - b. Perform synchronized cardioversion, 1 J/kg
 - c. Increase dose to 2 J/kg for additional synchronized cardioversion
 - d. DO NOT EXCEED ADULT DOSING.
2. Regular, Wide Complex Tachycardia – Unstable
 - a. Prepare for immediate cardioversion. In conscious patients consider sedation prior to electrical cardioversion. Refer to **Patient Procedural Sedation-Procedure Protocol**.
 - b. Perform synchronized cardioversion, 1 J/kg
 - c. For recurrent or refractory wide complex – unstable tachycardia, consult Medical Control prior to medication administration (medication per MCA selection)



NOTE: MI MEDIC includes amiodarone for shock resistant V-fib. The dosage is the same for unstable wide complex tachycardia (with a pulse), administered slow IV push.

Per MCA Selection

- ☒ Amiodarone 5 mg/kg (max single dose 300 mg) IV/IO slow push over 10 minutes (May repeat twice). Do not exceed 450 mg total IV/IO or
- ☐ Lidocaine 1 mg/kg IV/IO (May repeat 0.5 mg/kg twice at 5-10 minute intervals). Maximum 3 doses total

d. Irregular, Wide Complex Tachycardia – Unstable

- i. Defibrillate according to **Electrical Therapy Procedure**
- ii. Refer to **Pediatric General Cardiac Arrest Protocol**
- e. If able to convert tachycardia, maintain full cardiac monitoring including pulse oximetry and supportive care until transfer of care at the receiving facility.

3. **STABLE**

a. Regular Narrow Complex Tachycardia – Stable (SVT)

i. Perform vagal maneuvers

- 1. Ensure the patient is on oxygen and on a cardiac monitor.
- 2. Run ECG strip during the procedure.
- 3. If child is able to follow instructions:
 - a. Blow into a 10 mL syringe for 15 seconds
 - b. Squat and bear down
- 4. If child is not able to follow instructions:
 - a. While supine elevate the patient's legs to the knee chest position for 60 seconds.
 - b. If available, consider quickly placing a bag of ice on the eyes and forehead. Do NOT occlude the nose or place below the bridge of the nose.
 - i. Results are generally seen within 15 seconds.
 - ii. This is not an ongoing intervention, it is an abrupt maneuver not be maintained for more than 15 seconds.

5. DO NOT USE CAROTID MASSAGE.



- ii. Contact Medical Control prior to administration. Administer **adenosine** according to MI MEDIC cards if vagal maneuvers are ineffective.
 - 1. If MI MEDIC cards are not available administer **adenosine**
 - a. 0.1 mg/kg (max of 6 mg) rapid IV push through the most proximal injection site, immediately followed by a 10 mL flush.

- b. May repeat once with 0.2 mg/kg (max of 12 mg) administered as above.
- b. Regular, Wide Complex Monomorphic QRS Tachycardia – Stable
 -  i. Contact Medical Control
 - ii. Consider **adenosine** per MI MEDIC cards.
 - 1. If MI MEDIC cards are not available administer **adenosine**
 - a. 0.1 mg/kg (max of 6 mg) rapid IV push through the most proximal injection site, immediately followed by a 10 mL flush.
 - b. May repeat once with 0.2 mg/kg (max of 12 mg) administered as above.

Medication Protocols

Adenosine, Amiodarone, Lidocaine

Initial Date: 12/30/2022

Revised Date: 06/06/2023

Section 6-4

Return of Spontaneous Circulation (ROSC)

This protocol should be followed for all cardiac arrests with ROSC. If an arrest is of a known traumatic origin, refer to the **Traumatic Arrest-Treatment Protocol** and MCA Transport Protocol. If it is unknown whether the arrest is traumatic or medical, consider other treatable causes. Initiate ALS response if available. After ROSC, patients should be stabilized on scene prior to transport, ideally for at least five minutes before moving the patient. Refer to **Pediatric Crashing Patient/Impending Arrest-Treatment Protocol**.

1. Pediatric patients (≤ 14 years) utilize MI MEDIC cards for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
2. If ventilation assistance is required, ventilate at 10-12 breaths per minute. Do not hyperventilate.
3. Reassess patient, if patient becomes pulseless
 - a. Begin CPR
 - b. Follow **Pediatric Cardiac Arrest-Treatment Protocol**.
4. Monitor vital signs.
-  5. Check blood glucose (may be MFR skill, see **Blood Glucose Testing-Procedure Protocol**)
-  6. Start an IV/IO **NS** or **LR KVO**.
-  7. Treat hypotension with an IV/IO fluid bolus 20 ml/kg consistent with **Shock-Treatment Protocol**.
-  8. May perform 12-lead ECG (Per MCA selection, may be BLS skill per **12 Lead ECG-Procedure Protocol**) but must not delay or take precedence over other critical assessments and interventions.
-  9. Monitor waveform ETCO₂. If ventilation assistance is required, target ETCO₂ of 35-45 mm Hg per **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**
-  10. If hypotension persists after IV/IO fluid bolus, administer push dose **epinephrine** (diluted boluses) according to MI MEDIC cards.
 - a. If MI MEDIC cards are not available prepare (10 mcg/mL) by adding 1mL of 1mg/10mL **epinephrine** in 9mL **NS**, then
 - i. Administer 1 mcg/kg (0.1 mL/kg **epinephrine** 10 mcg/mL)
 - ii. Maximum dose 10 mcg (1 mL)
 - iii. Repeat every 3-5 minutes
 - iv. Titrate to age appropriate SBP per MI MEDIC cards. If MI MEDIC cards are unavailable titrate SBP > 70 mmHg + (2 x age in years) up to 100 mmHg.
2. Anticipate airway intolerance and prepare for patient sedation. If patient becomes agitated with advanced airway in place, refer to **Patient Procedural Sedation-Procedure Protocol**.

Medication Protocols

Epinephrine

Initial Date: 5/31/2012
Revised Date: 03/31/2025

Section: 7-1

12-Lead ECG



Paramedic Protocol (may be Specialist or EMT per MCA selection)

Indications:

1. A 12-lead ECG is indicated and must be performed on patients exhibiting any of the following signs/symptoms:
 - A. Chest pain or pressure
 - B. Abdominal pain
 - C. Syncope
 - D. Shortness of breath
 - E. Pain/discomfort which are often associated with cardiac ischemia:
 - a. Jaw, neck, shoulder, left arm or other presentations; unless no other symptoms exist and the cause of the specific pain can be identified with a traumatic or musculoskeletal injury.
 - b. If there is any doubt about the origin of the pain/discomfort, or the presentation seems atypical for the mechanism, a 12-lead should be performed.
2. Patients exhibiting any of the following signs/symptoms must have a 12-lead ECG performed if the etiology of the illness is indicative of an Acute Coronary Syndrome or the etiology of the illness is indeterminate:
 - A. Nausea
 - B. Vomiting
 - C. Diaphoresis
 - D. Dizziness
 - E. Patient expression of “feelings of doom”
3. A 12-lead ECG should be performed based on the clinical judgment of the paramedic even in the absence of the above signs/symptoms.

Procedure:

1. Follow **General Pre-hospital Care-Treatment Protocol**.
2. Perform 12-lead ECG per manufacturer guidelines, if available.

MCA approval to obtain ECG

☒ Specialist

☐ EMT

MCA approval to transmit ECG (and notify of STEMI)

☐ Specialist

☒ EMT

MCA's will be responsible for maintaining a roster of the BLS and LALS agencies choosing to participate and will submit roster to MDHHS

Initial Date: 5/31/2012

Revised Date: 03/31/2025

Section: 7-1

3. Report if acute MI is suspected, either by device or paramedic provider interpretation and promptly relay either the 12-lead findings via MCA approved communications system or transmit 12-lead to the receiving facility.
4. Alternative 12-lead ECG lead placement.
 - A. 12-leads that exhibit contiguous ST segment elevation in leads II, III, or aVF should have a right sided 12-lead ECG performed with a minimum of V4r.
 - B. 12-leads that exhibit ST segment depression in V1-V4 with accompanying ACS symptoms should have a posterior 12 Lead performed with a minimum of 2 leads.
 - i. V4 becomes V7, V5 becomes V8, and V6 becomes V9.
5. Agencies, in cooperation with hospitals with pre-hospital 12-lead ECG receiving capability, should have the relay done electronically as soon as possible for the following conditions:
 - A. ST elevation ≥ 1 mm in 2 contiguous leads.
 - B. Chest pain patient with left bundle branch block.
 - C. EMS personnel request assistance by hospital for interpretation of ECG.
 - D. Hospital requests ECG be sent.
6. The Acute MI Report relayed to the receiving facility should include the following:
 - A. *** **STEMI Suspected** *** or equivalent machine indication of Acute MI.
 - B. Location of MI, "ST elevation, consider _____ injury".
 - C. Time of onset of the chest pain if present.
 - D. Current level of pain.
 - E. Cardiac history (previous MI, CHF, CABG, Angioplasty or Stent).
 - F. Presence of possible indicators of false positive ECG (tachyarrhythmia, left bundle branch block, pacemaker, wide complex QRS, positive ECG with artifact after previous negative ECG).
7. Transport patients per MCA transport protocol.
8. Repeat 12-lead is indicated for prolonged transports or changes in condition.
 - A. Patients that meet criteria for initial 12-lead ECG should have leads left in place during transport
 - B. 12-lead should be repeated every 5-10 minutes for any patient if they met the initial criteria for a 12-lead ECG.
 - C. Devices with active ST segment monitoring do not require repeat ECGs unless there is a noticeable change in the patient's condition.

Tri-County Emergency Medical Control Authority
Procedures
12-LEAD ECG ADDENDUM



Initial Date: 9/5/2025

Revised Date:

Section 7-1a

12-LEAD ECG ADDENDUM

Indications:

4. Consider obtaining a 12-lead ECG when patients present with traumatic chest injuries, especially in blunt force trauma cases.

Child Abuse & Neglect (Suspected)

Aliases: Child abuse, 3200 form, mandatory reporting

Purpose: To provide the process for assessment and management for patients of suspected child abuse.

When emergency personnel suspect that a patient has been abused (physically and/or sexually), neglected, or exploited, **a verbal and written report must be made to the emergency physician on arrival at the hospital and to the Protective Services Agency (child or adult).** The primary purpose is protection of the patient from further harm. Do not confront the patient or family members with such suspicions at the scene.

Michigan law (MCL 722.623) requires that licensed EMS providers who have “reasonable cause to suspect child abuse or neglect” shall report “immediately, by telephone or otherwise” their suspicions to the Protective Services Agency for the County involved. In cases of suspected child abuse, this oral report shall also be followed with a written report on the Department of Human Services forms available in every hospital emergency department.

Michigan law (MCL 400.11a) also requires this same oral report for suspected cases of abuse or neglect of an adult.

Licensed providers are required to make an immediate verbal report and a written report within 72 hours when they suspect child abuse or neglect. Mandated reporters must also notify the head of their organization of the report. Reporting the suspected allegations of child abuse and/or neglect to the head of the organization does not fulfill the requirement to report directly to MDHHS.

The verbal report can be completed by calling 855-444-3911. The pdf form is found here [DHS3200-report.dot \(live.com\)](https://dhs3200-report.dot.live.com) and is included in the protocol for reference. Reports can be made [online](#) (login required).

1. Definitions

“Child Abuse” means harm or threatened harm to a child’s health or welfare by a parent, legal guardian, or any other person responsible for the child’s health or welfare...that occurs through non-accidental physical or mental injury; sexual abuse; sexual exploitation, or maltreatment.

“Child Neglect” means harm or threatened harm to a child’s health or welfare by a parent, legal guardian, or any other person responsible for the child health or welfare that occurs through either of the following: 1) Negligent treatment, including the failure to provide adequate food, shelter, or medical care; 2) Placing a child at an unreasonable risk to the child’s health or welfare by failure of the parent, legal guardian, or any other person responsible for the child’s health or welfare to intervene to eliminate that risk when that person is able to do so and has, or should have, knowledge of the risk.

2. Indicators of Possible Abuse

- History of abuse provided by the patient
- Delay in seeking care for injury
- Injury inconsistent with history provided
- Conflicting reports of injury from patient and care-giver
- Patient unable, or unwilling, to describe mechanism of injury
- Lacerations, bruises, burns, or fractures in various stages of healing
- Scald burns with demarcated immersion lines
- Scald burns involving anterior or posterior half of extremity
- Scald burns involving buttocks or genitalia
- Cigarette burns
- Bruising in a non-ambulatory child
- Rope burns or marks
- Patient confined to restricted space or position
- Pregnancy or presence of venereal disease in a child less than 12 years

3. Physical Assessment

- A. Treat and document physical injury per the appropriate medical treatment protocol.
- B. Observe for:
 - Potential over-sedation
 - Inappropriate fear
 - Avoidance behavior
 - Poor parent-child bonding
 - Inappropriate interaction with care giver

4. Evaluation and Documentation

- Focus the interview on the patient's physical injury. Do not address the specifics of abuse or neglect at this point.
- Obtain and record pertinent history related to the presenting problems.
- Determine and chart past medical history, and any cognitive or physical impairment.
- Note signs of inadequate housing or lack of facilities such as heat or water.
- Carefully and specifically document the patient's statement of instances of rough handling, sexual abuse, alcohol or drug abuse by family members, verbal or emotional abuse, isolation or confinement, misuse of property or theft, threats, gross neglect such as restriction of fluids, food or hygiene.
- Attempt to record, verbatim (word for word), any excited utterances (spontaneous comments).
- If necessary, ask the caregiver for information regarding the patient's medical condition. Observe mental health of caregiver.

Michigan
PROCEDURES
CHILD ABUSE AND NEGLECT (SUSPECTED)

Initial Date: 5/31/2012

Revised Date: 05/23/2023

Section: 7-2

-
- Request police assistance if there is any history of threatening, abusive, or violent acts. Protect yourself while obtaining a safe environment for the patient.

5. Special Considerations

- If the patient is not transported, the suspected abuse must still be reported. Law enforcement may also be contacted, at the discretion of EMS providers.
- Careful and specific documentation is vital because the “story” often changes as the investigation proceeds.
- Contact the Department of Health and Human Services Hotline at 1-855-444-3911.

**Michigan
PROCEDURES
CHILD ABUSE AND NEGLECT (SUSPECTED)**

Initial Date: 5/31/2012
Revised Date: 05/23/2023

Section: 7-2

REPORT OF ACTUAL OR SUSPECTED CHILD ABUSE OR NEGLECT

Michigan Department of Health and Human Services

Was Complaint Phoned to MDHHS?																																		
☐ Yes ☐ No ▶ If yes, Intake ID # _____ ▶ If no, contact Centralized Intake (855-444-3911) immediately																																		
INSTRUCTIONS: REPORTING PERSON: Complete items 1-19 (20-28 should be completed by medical personnel, if applicable). Send to Centralized Intake at the address listed on page 2.				1. Date																														
2. List of Child(ren) Suspected of Being Abused or Neglected. <i>To insert additional rows, tab at the end of last row to create a new row.</i>																																		
NAME	BIRTH DATE	SOCIAL SECURITY #	SEX	RACE																														
"Click Here and Type"																																		
3. Mother's Name																																		
4. Father's Name																																		
5. Child(ren)'s Address (No. & Street)		6. City	7. County	8. Phone No.																														
9. Name of Alleged Perpetrator of Abuse or Neglect		10. Relationship to Child(ren)																																
11. Person(s) The Child(ren) Living With When Abuse/Neglect Occurred		12. Address, City & Zip Code Where Abuse/Neglect Occurred																																
13. Describe Injury or Conditions and Reason for Suspicion of Abuse or Neglect																																		
14. Source of Complaint (Add reporter code below)																																		
<table border="0"> <tr> <td>01 Private Physician/Physician's Assistant</td> <td>11 School Nurse</td> <td>42 MDHHS Facility Social Worker</td> </tr> <tr> <td>02 Hosp/Clinic Physician/Physician's Assistant</td> <td>12 Teacher</td> <td>43 DMH Facility Social Worker</td> </tr> <tr> <td>03 Coroner/Medical Examiner</td> <td>13 School Administrator</td> <td>44 Other Public Social Worker</td> </tr> <tr> <td>04 Dentist/Register Dental Hygienist</td> <td>14 School Counselor</td> <td>45 Private Agency Social Worker</td> </tr> <tr> <td>05 Audiologist</td> <td>21 Law Enforcement</td> <td>46 Court Social Worker</td> </tr> <tr> <td>06 Nurse (Not School)</td> <td>22 Domestic Violence Providers</td> <td>47 Other Social Worker</td> </tr> <tr> <td>07 Paramedic/EMT</td> <td>23 Friend of the Court</td> <td>48 FIS/ES Worker/Supervisor</td> </tr> <tr> <td>08 Psychologist</td> <td>25 Clergy</td> <td>49 Social Services Specialist/Manager (CPS, FC, etc.)</td> </tr> <tr> <td>09 Marriage/Family Therapist</td> <td>31 Child Care Provider</td> <td>56 Court Personnel</td> </tr> <tr> <td>10 Licensed Counselor</td> <td>41 Hospital/Clinic Social Worker</td> <td> </td> </tr> </table>					01 Private Physician/Physician's Assistant	11 School Nurse	42 MDHHS Facility Social Worker	02 Hosp/Clinic Physician/Physician's Assistant	12 Teacher	43 DMH Facility Social Worker	03 Coroner/Medical Examiner	13 School Administrator	44 Other Public Social Worker	04 Dentist/Register Dental Hygienist	14 School Counselor	45 Private Agency Social Worker	05 Audiologist	21 Law Enforcement	46 Court Social Worker	06 Nurse (Not School)	22 Domestic Violence Providers	47 Other Social Worker	07 Paramedic/EMT	23 Friend of the Court	48 FIS/ES Worker/Supervisor	08 Psychologist	25 Clergy	49 Social Services Specialist/Manager (CPS, FC, etc.)	09 Marriage/Family Therapist	31 Child Care Provider	56 Court Personnel	10 Licensed Counselor	41 Hospital/Clinic Social Worker	
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15. Reporting Person's Name		Report Code (see above) 15a. Name of Reporting Organization (school, hospital, etc.)																																
15b. Address (No. & Street)		15c. City	15d. State	15e. Zip Code 15f. Phone Number																														
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DHS-3200 (Rev. 6-18) Previous edition may be used.

1

Michigan PROCEDURES CHILD ABUSE AND NEGLECT (SUSPECTED)

Initial Date: 5/31/2012

Revised Date: 05/23/2023

Section: 7-2

TO BE COMPLETED BY MEDICAL PERSONNEL WHEN PHYSICAL EXAMINATION HAS BEEN DONE

20. Summary Report and Conclusions of Physical Examination (Attach Medical Documentation)		
21. Laboratory Report	22. X-Ray	
23. Other (specify)	24. History or Physical Signs of Previous Abuse/Neglect ☐ YES ☐ NO	
25. Prior Hospitalization or Medical Examination for This Child		
DATES		PLACES
26. Physician's Signature	27. Date	28. Hospital (if applicable)
The Michigan Department of Health and Human Services (MDHHS) does not discriminate against any individual or group because of race, religion, age, national origin, color, height, weight, marital status, genetic information, sex, sexual orientation, gender identity or expression, political beliefs or disability.		AUTHORITY: P.A. 238 of 1975. COMPLETION: Mandatory. PENALTY: None.

INSTRUCTIONS

GENERAL INFORMATION:

This form is to be completed as the written follow-up to the oral report (as required in Sec. 3 (1) of 1975 PA 238, as amended) and mailed to Centralized Intake for Abuse & Neglect. Indicate if this report was phoned into MDHHS as a report of suspected CA/N. If so, indicate the Log # (if known). The reporting person is to fill out as completely as possible items 1-19. Only medical personnel should complete items 20-28.

Mail this form to:
Centralized Intake for Abuse & Neglect
5321 28th Street Court, SE
Grand Rapids, MI 49546

OR

Fax this form to 616-977-8900 or 616-977-8050 or 616-977-1158 or 616-977-1154

OR

email this form to MDHHS-CPS-CIGroup@michigan.gov

1. Date – Enter the date the form is being completed.
 2. List child(ren) suspected of being abused or neglected – Enter available information for the child(ren) believed to be abused or neglected. Indicate if child has a disability that may need accommodation.
 3. Mother's name – Enter mother's name (or mother substitute) and other available information. Indicate if mother has a disability that may need accommodation.
 4. Father's name – Enter father's name (or father substitute) and other available information. Indicate if father has a disability that may need accommodation.
 - 5.-7. Child(ren)'s address – Enter the address of the child(ren).
 8. Phone Number – Enter phone number of the household where child(ren) resides.
 9. Name of alleged perpetrator of abuse or neglect – Indicate person(s) suspected or presumed to be responsible for the alleged abuse or neglect.
 10. Relationship to child(ren) – Indicate the relationship to the child(ren) of the alleged perpetrator of neglect or abuse, e.g., parent, grandparent, babysitter.
 11. Person(s) child(ren) living with when abuse/neglect occurred – Enter name(s). Indicate if individuals have a disability that may need accommodation.
 12. Address where abuse / neglect occurred.
 13. Describe injury or conditions and reason of suspicion of abuse or neglect – Indicate the basis for making a report and the information available about the abuse or neglect.
 14. Source of complaint – Check appropriate box noting professional group or appropriate category.
- Note:** If abuse or neglect is suspected in a hospital, also check hospital.
- 15.-19 - Reporting person's name - Enter the name and address of person(s) reporting this matter.

Initial Date: 05/31/2012

Revised Date: 01/05/2023

Section 7-3

Crime Scene Management

Aliases: Crime scene preservation

1. Follow **General Pre-hospital Care Protocol-Treatment Protocol**
2. Preserve evidence whenever possible.
 - A. Wear gloves for all patient care and other activities within the crime scene.
 - B. Never cut through holes in clothing created by bullets or knives.
 - C. Retain all clothing, place in a paper bag. Be alert for torn clothing, fragments of cloth, blood, or body fluids, etc. for they need to be preserved as evidence.
 - D. Law enforcement is responsible for the disposition of this evidence.
 - E. When transporting a patient who may be dying, ascertain name and/or description of assailant if possible.
 - F. At an outdoor crime scene do not disturb shoe prints, tire marks, shell casings, etc.
 - G. Limit movement at the crime scene.
 - H. Attempt to keep others out of the area.
3. Advise patient to not shower, change clothes, or dispose of pertinent objects. If applicable, refer to **Sexual Assault-Treatment Protocol**.
4. Assess patient for injury and treat according to protocol.
5. Use sensitivity in asking victim about history/events.
6. Thoroughly document all injuries and voluntary statements of patient. Red marks may disappear and your documentation may be the only witness that the victim was choked or struck, even though he/she stated it.
7. Document patient's emotional state.
8. Assure law enforcement agency has been notified.
 - A. Notify the investigating law enforcement of any alteration of the crime scene by EMS personnel including:
 - a. Any movement of furniture, tables, etc.
 - b. The original position of the patient and items.
 - c. If you turned on lights.
 - d. What you touched, moved, etc.
-  9. Transport, treating according to appropriate protocol.
 -  A. If transport is refused, refer patient to support agency and/or hospital whenever possible and contact medical control if applicable.

NOTES:

1. Your first duty is to provide emergency medical care at the scene of an illness/injury.
2. Certain measures can be taken to assist law enforcement personnel in preserving a crime without jeopardy to the patient.
3. The investigation of the circumstances surrounding the incident is the responsibility of the law enforcement agency.
4. Do not touch firearms (loaded or unloaded) unless it poses a potential or immediate threat. Secure any weapon that can be used against you or the crew out of the reach of the patient and bystanders.

Vulnerable Adult Abuse, Neglect, or Exploitation (Suspected)

Aliases: elder abuse, mandatory reporting

Purpose: To provide the process for assessment and management of vulnerable adult patients with suspicion of elder abuse.

I. Definitions

- a. Vulnerable adult – means an individual age 18 and older who is unable to protect himself or herself from abuse, neglect or exploitation because of a mental or physical impairment or because of advanced age.
- b. Abuse - means harm or threatened harm to an adult's health or welfare caused by another person. Abuse includes, but is not limited to, non-accidental physical or mental injury, sexual abuse, or maltreatment.
- c. Exploitation - means an action that involves the misuse of an adult's funds, property, or personal dignity by another person.
- d. Neglect - means harm to an adult's health or welfare caused by the inability of the adult to respond to a harmful situation or by the conduct of a person who assumes responsibility for a significant aspect of the adult's health or welfare. Neglect includes the failure to provide adequate food, clothing, shelter, or medical care.

Note: A person shall not be considered to be abused, neglected, or in need of emergency or protective services for the sole reason that the person is receiving or relying upon treatment by spiritual means through prayer alone in accordance with the tenets and practices of a recognized church or religious denomination, and this act shall not require any medical care or treatment in contravention of the stated or implied objection of that person.

II. Procedure

- a. Do not confront the suspected abuser with suspicions as this could create an unsafe situation for the patient and EMS personnel.
- b. Do not question the patient about suspected abuse/maltreatment in front of the suspected abuser. The primary goal, after treating life threatening injuries, is to protect the patient and personnel from harm.
- c. Request police assistance if there is any history of threatening, abusive, or violent acts. Protect yourself while obtaining a safe environment for the patient.
- d. Focus the interview on the patient's injury. Do not address the specifics of abuse, maltreatment, or neglect at this point.
- e. Determine and chart past medical history, and any cognitive or physical impairment.
- f. During assessment, pay attention to signs and symptoms of abuse, neglect, or exploitation.
 - i. Physical

Michigan
PROCEDURES
VULNERABLE ADULT

ABUSE, NEGLECT, or EXPLOITATION (SUSPECTED)

Initial Date: 01/05/2023

Revised Date:

Section: 7-4

1. Injury inconsistent with history provided
 2. Delay in seeking care for injury
 3. Lacerations, bruises, burns, or fractures in various stages of healing
 4. Scald burns with demarcated immersion lines
 5. Scald burns involving anterior or posterior half of extremity
 6. Cigarette burns
 7. Rope burns or marks
 8. Potential over-sedation
 9. Appearance of malnourishment
 - ii. Environmental
 1. Patient confined to restricted space or position
 2. Inadequate housing including:
 - a. Hazardous situations
 - b. Hoarding
 - c. Squalor
 3. Lack of facilities, such as heat or water
 4. Restricted access or lack of adequate food and fluids
 - iii. Psychosocial
 1. History of abuse provided by the patient
 2. Conflicting reports of injury from patient and caregiver
 3. Patient unable or unwilling to describe mechanism of injury
 4. Inappropriate fear
 5. Avoidance behavior
 6. Disappearing from contact with neighbors, friends, or family
 7. Inappropriate interaction with care giver
 - g. Treat patient according to appropriate protocol for their condition.
 - h. Transport patient according to MCA transportation protocol and transfer care to receiving facility. Discreetly notify the receiving health care provider of suspected abuse, maltreatment, or neglect.
 - i. Documentation of suspected abuse, neglect, or exploitation includes, but is not limited to:
 - i. Pertinent history related to the presenting problems
 - ii. Any statements of the patient pertaining to instances of rough handling, sexual abuse, alcohol or drug abuse by family members, verbal or emotional abuse, isolation or confinement, misuse of property or theft, threats, gross neglect such as restriction of fluids, food or hygiene
 - iii. Excited utterances (spontaneous comments) should be documented verbatim (word for word)
 - iv. Mental health of caregiver
 - v. Any other suspicious findings
- III. Other Indications of Exploitation**
- a. Oversight of finances surrendered to others without explanation or consent
 - b. Transferring assets to “new friends” assisting with finances
 - c. Unexplained or unauthorized changes to wills or other estate documents

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Initial Date: 01/05/2023

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- d. Advance directives or other decisions being made by those who appear to have a conflict of interest
- e. Patient does not understand current finances, offers improbable explanations
- f. Unexplained disappearances of cash, valuable objects, or financial statements

IV. Mandatory Reporting

- a. Michigan law (MCL 400.11a) requires a verbal report for suspected cases of abuse, neglect, or exploitation of a vulnerable adult to Michigan Department of Health and Human Services Centralize Intake for Abuse and Neglect at **855-444-3911**.
- b. Reporting the suspected allegations of abuse, neglect, or exploitation to an organization does not fulfill the requirement to report directly Michigan Department of Health and Human Services Centralize Intake for Abuse and Neglect.

V. Special Considerations

- a. If the patient is not transported, the suspected abuse must still be reported. Law enforcement may also be contacted, at the discretion of EMS providers.
- b. Do not rely on someone else on scene of the incident to report.

Protocol Source/References: MCL 400.11

**Michigan
PROCEDURES**
**CONTINUOUS POSITIVE AIRWAY PRESSURE
ADMINISTRATION
(CPAP)**

Initial Date: 02/15/2012
Revised Date: 11/17/2025

Section 7-5



Continuous Positive Airway Pressure (CPAP) Administration

CPAP is intended for use on patients who have not responded to initial treatment, meet one or more of the indications listed below and have no contraindications for use. Contraindicated patients and those that do not meet the inclusion criteria will be treated according to existing protocols without the application of CPAP.

CPAP Machine Requirements: CPAP machines must have adjustable cmH2O minimally up to 10 cmH2O.

Indications:

Severe respiratory distress for the following which has not responded to initial treatment:

1. CHF/Pulmonary edema
2. Pulmonary edema/near drowning
3. Hypoxia (i.e., SpO2 less than 92%) after application of supplemental oxygen
4. Acute exacerbation of asthma/COPD

Contraindications:

1. Respiratory/cardiac arrest
2. Uncorrected Hypotension
 - a. Adult (≥ 10 years of age) less than 90mmHg systolic
 - i. NOTE: $70 + (2 \times 10 \text{ years of age}) = 90 \text{ mmHg}$
 - b. Pediatrics (< 10 years of age) less than $(70 \text{ mmHg} + [2 \times \text{age in years}])$.
3. Small adult CPAP mask does not properly fit the patient and/or pediatric size CPAP mask is not available
4. Inability to maintain patent airway (poor clearance of secretions and/or unresponsive)
5. Major trauma, pneumothorax, penetrating or blunt chest trauma and blast injury
6. Active vomiting or active GI bleeding with emesis
7. Facial trauma and/or facial burns

Procedure

1. EXPLAIN THE PROCEDURE TO THE PATIENT.
2. Apply appropriately sized and properly sealing CPAP mask per manufacturer's recommendations.
3. Place the patient on continuous pulse oximetry.
4. Secure the mask with provided straps and tighten to obtain a good seal, check for air leaks.
5. Continue to coach the patient to keep the mask in place, readjust as needed.
6. Begin with 5 cmH2O with titration as necessary and as tolerated.
7. Advise medical control of CPAP use during radio report.
8. If respiratory status deteriorates, remove the device and assist ventilations with a BVM/supplemental oxygen; place an appropriate airway control device.
9. Obtain/monitor vital signs.

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10. Administer medications, per appropriate protocol, as indicated.

- a. The CPAP mask can be briefly removed for oral or SL medication (e.g., nitroglycerin) administration.



11. Contact medical control and consider sedation to reduce anxiety per **Patient Procedural Sedation- Procedure Protocol**.

Monitor

1. Level of consciousness
2. Gastric distention
3. Blood pressure
4. SpO2
5. Lung Sounds

Discontinuing CPAP Therapy



1. CPAP therapy needs to be continuous
2. Discontinue CPAP use, assist ventilations if necessary and contact medical control if:
 - a. Patient cannot tolerate the mask.
 - b. Patient has marked deterioration including respiratory arrest and/or decreasing LOC.
 - c. Patient has, or is at risk for, vomiting.
 - d. Patient develops signs of a pneumothorax.
 - e. It is determined to be clinically detrimental.



3. Discontinuation of CPAP for other reasons, contact Medical Control prior to discontinuation.

Special Notes:

1. Upon arrival at receiving facility, do not remove CPAP until hospital therapy is ready to be placed on the patient.
2. CPAP may be used on DNR patients not in arrest.
3. Due to changes in cardiac preload and afterload during CPAP therapy, a complete set of VS must be obtained every 10 minutes (5 minutes in short transport situations).

Protocol Reference:

PHTLS (10th), Saunders (5th), Caroline (9th).

Schwerin, A., Kuhl, E., Goldstein, S. (2024, June 22). EMS Prehospital CPAP Devices. National Library of Medicine. Retrieved 10/18/24 from <https://www.ncbi.nlm.nih.gov/books/NBK470429/>

**Michigan
PROCEDURES
DEAD ON SCENE &
TERMINATION OF RESUSCITATION**

Initial Date: 01/27/2023
Revised Date: 03/17/2025

Section 7-6

Dead on Scene & Termination of Resuscitation

Purpose: For patients in cardiac arrest, when and when not to initiate CPR, and when to terminate efforts.

- A. Dead on Scene Criteria - CPR should NOT be initiated in the following cardiac arrest patients:
1. Decomposition
 2. Rigor mortis (Caution: do not confuse with stiffness due to cold environment)
 3. Dependent lividity
 4. Decapitation
 5. Traumatic cardiac arrest while entrapped (witnessed or unwitnessed)
 6. Incinerated or frozen body
 7. Submersion greater than 90 minutes in cold water (water temperature less than 70° F/21° C) as documented by the licensed health care professional after arrival on scene.
 8. Submersion greater than 30 minutes in warm water (water temperature greater than 70° F/21° C) as documented by the licensed health care professional after arrival on scene.
 9. Gross dismemberment or obvious mortal wounds/conditions (injuries inconsistent with life – i.e., crushing injuries of the head and/or chest)
 10. Unwitnessed arrest of traumatic origin, without organized electrical activity (must be asystole or pulseless rhythm with rate less than 40/min).
 - i. Exception to this is electrocution (including lightning strike) or acute hypothermia.
 11. Patient has a valid “Do Not Resuscitate” identification bracelet or order refer to **DNR-Procedure Protocol**
 12. Patient has MI-POST with Do Not Resuscitate selected in section A refer to **MI POST-Procedure Protocol**
 13. In cases of mass casualty incidents, where the number of patients exceeds the providers and resources to care for them, any patient who is pulseless and apneic may be triaged as deceased.
- B. Exceptions to Dead on Scene Criteria in which CPR should be initiated:
1. In EMS professional judgement potential viability despite meeting Dead on Scene criteria.
 2. Pregnant patient arrest witnessed by either bystanders or EMS personnel
 - i. Resuscitation and immediate transport to the closest receiving facility
 - ii.  Contact Medical Control as early as possible
- C. For all other patients:
1. Follow the **Adult or Pediatric Cardiac Arrest-Treatment Protocol**.
 2. Medical cardiac arrest patients undergoing attempted resuscitation will not be transported unless return of spontaneous circulation (ROSC) is achieved.

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Initial Date: 01/27/2023

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- i. If the resuscitation cannot be safely performed on scene patient should be loaded into transporting unit and vehicle should be moved to closest appropriate area to continue resuscitation efforts
 -  ii. Contact Medical Control for special circumstances requiring early transport and document accordingly.
 3. Patients will have resuscitation continued at the scene for at least 30 minutes.
 -  i. Contact Medical Control for special circumstances and document accordingly.
 4. If ROSC is achieved see **Adult or Pediatric Return of Spontaneous Circulation-Treatment Protocol**

D. Termination of Resuscitation if ROSC is NOT Achieved

-   1. ALS Termination of Resuscitation, after 30 minutes of ALS time contact Medical Control for:
 - i. Consideration of termination of resuscitation for Asystole in all 3 leads or PEA with a rate of less than 40.
 - ii. Consideration of termination and/or further orders/potential transport for PEA with a rate of 40 or greater, or persistent/recurrent V Fib.
 - iii. Confirm lack of mechanical activity in all PEA rhythms of 40 or greater by auscultation of apical pulse.
-  2. BLS Termination of Resuscitation
 - i. AHA Guidelines suggest that the following are reliable and valid criteria for BLS termination of resuscitation when **ALL** the following apply:
 - a. Arrest not witnessed by EMS personnel
 - b. ROSC is not present after 20 minutes of high-quality CPR with an adequate airway.
 - c. No AED shock was delivered by EMS personnel or prior to arrival.
 -  ii. Contact Medical Control for the following:
 - a. Termination of efforts
 - b. Further orders for on scene care/treatment
 - c. Consideration of transport in extreme situations
3. The medical examiner system will be activated consistent with **Medical Examiner Notification and Body Disposition Protocol**
4. Prehospital personnel will provide information to the family which should include medical control procedures for termination of resuscitation when applicable.
5. The following must be documented
 - a. Time of death as pronounced by physician
 - b. Name of hospital and physician providing time of death
 - c. Notification of law enforcement
 - d. Gift of life status

Initial Date: 05/31/2025

Revised Date: 02/25/2026

Section 7-7

Do-Not-Resuscitate

Aliases: DNR

Purpose: The purpose of this protocol is to provide a guideline to prehospital providers who, under certain circumstances, may encounter patients who do not wish to receive and/or may not benefit from cardiopulmonary resuscitation. This protocol is written in accordance with Public Act 368 of 1978, as amended, as well as Act 192 and 193 of the Public Acts of 1996, as amended (MCL 333.1051 *et seq.*). This policy is intended to facilitate kind, humane, and compassionate service for patients who have executed a valid “Do-not-resuscitate order” under the aforementioned Acts.

1. Definitions

- A. Attending Physician – means the physician who has primary responsibility for the treatment and care of a declarant.
- B. Declarant – means a person who has executed a do-not-resuscitate order, or on whose behalf a do-not-resuscitate order has been executed pursuant to applicable laws.
- C. Do-not-resuscitate order – means a document executive pursuant to Act 193, directing that in the event a patient suffers cessation of both spontaneous respiration and circulation in a setting outside of a hospital, nursing home, or mental health facility owned or operated by the MDHHS, no resuscitation will be initiated.
- D. Do-not-resuscitate Identification Bracelet or Identification Bracelet – means a wrist bracelet that meets the requirements of Act 193 and worn by a declarant while a do-not-resuscitate order is in effect.
- E. Guardian – means a person who has qualified as a guardian of a minor or a legally incapacitated individual under a parental or spousal nomination or a court appointment and includes a limited guardian as described in MCL 700.5205, 700.5206, and 700.5306. Guardian does not include a guardian *ad litem*.
- F. MI-POST Michigan Physician Order for Scope of Treatment see **MI POST-Procedure Protocol**
- G. Minor child – means an individual who is less than 18 years of age, has been diagnosed by an attending physician as having an advanced illness, and is not emancipated by operation of law as provided in section MCL 722.4.
- H. Order – means a do-not-resuscitate order.
- I. Parent – means the natural or adoptive parent of a minor child who possesses legal decision-making authority as to the important decisions affecting the welfare of the minor child.
- J. Patient Advocate – means an individual designated to exercise powers concerning another individual's care, custody, and medical or mental health treatment or authorized to make an anatomical gift on behalf of another individual, or both, as provided in MCL 700.5506.
- K. Vital Sign – means a pulse or evidence of respiration.

2. Procedure

A do-not-resuscitate order is applicable to all prehospital life support agencies and personnel. A do-not-resuscitate order may be executed by the following individuals:

- an individual 18 years of age or older and of sound mind;
- a patient advocate of an individual 18 years of age or older;
- the parent(s) with legal decision-making authority on behalf of his or her minor child;
- the legal guardian of an adult or minor ward.

A. CRITERIA: EMS providers **shall not attempt** resuscitation of any individual who meets **ALL** of the following criteria:

- a. Patient has no vital signs. This means no pulse or evidence of respiration.
- b. Patient is wearing a do-not-resuscitate identification bracelet which is clearly imprinted with the words "Do-Not-Resuscitate Order", name and address of declarant, and the name and telephone number of declarant's attending physician, if any **OR** The EMS provider is provided with a do-not-resuscitate order for the patient. Such an order form shall be in substantially the form outlined in the corresponding Annex and shall be dated and signed by all parties.

B. A patient wearing a "do-not-resuscitate order" identification bracelet, or who has executed a valid "do-not-resuscitate order" form, **but who has vital signs,** **shall not be denied** any treatments or care otherwise specified in protocols.



C. If a do-not-resuscitate order form is presented and is not substantially in the form as outlined in the corresponding Annex, or is not complete and signed by all parties, **resuscitation will be initiated** while Medical Control is being contacted for direction.



D. In the event care has been initiated on a patient, and subsequently a valid do-not-resuscitate order form is identified, and the patient meets the criteria in (2.A.) above, discontinue resuscitation and contact Medical Control.



E. A do-not-resuscitate order will not be followed if the declarant, patient advocate, legal guardian, or parent revokes the order. An order may be revoked at any time and in any manner by which the declarant, patient advocate, legal guardian, or parent is able to communicate this intent. **Resuscitation efforts will be initiated** and EMS personnel shall contact on-line Medical Control to advise them of the circumstances.

F. A patient care record will be completed for runs handled within this protocol. The patient care record will clearly specify the circumstances and patient condition found by the EMS providers, and describe the do-not-resuscitate documents involved.

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Revised Date: 02/25/2026

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Note: The forms included in this protocol are samples and demonstrate what a DNR might look like and should include according to MCL 333.1054. A valid DNR form does not need to look exactly like this, but must fundamentally contain these items.

Initial Date: 05/31/2025

Revised Date: 02/25/2026

Section 7-7

“DO-NOT-RESUSCITATE ORDER”
Declarant Consent

This do-not-resuscitate order is issued by _____,
attending physician for _____
(Name of declarant)

I have discussed my health status with my physician named above. I request that in the event my heart and breathing should stop, no person shall attempt to resuscitate me. This order will remain in effect until it is revoked as provided by law. Being of sound mind, I voluntarily execute this order, and I understand its full import.

_____ (Declarant’s signature)	_____ (Date)
_____ (Signature of person who signed for declarant, if applicable)	_____ (Date)
_____ (Type or print full name)	

ATTESTATION OF WITNESSES

The individual who has executed this order appears to be of sound mind, and under no duress, fraud, or undue influence. Upon executing this order, the declarant has (has not) received an identification bracelet.

_____ (Witness’s signature)	_____ (Date)
_____ (Type or print witness’s name)	
_____ (Witness’s signature)	_____ (Date)
_____ (Type or print witness’s name)	

This form was prepared pursuant to, and in compliance with,
the “Michigan Do-Not-Resuscitate Procedure Act”.

ANNEX 1

Initial Date: 05/31/2025

Revised Date: 02/25/2026

Section 7-7

**“DO-NOT-RESUSCITATE ORDER”
Minor Child**

This do-not-resuscitate order is issued by _____,
attending physician for _____
(Name of minor child)

I authorize that in the event the minor child's heart and breathing should stop, no person shall attempt to resuscitate the minor child. I understand the full import of this order and assume responsibility for its execution. This order will remain in effect until it is revoked as provided by law.

(Parent's signature)

(Date)

(Type or print parent's name)

(Parent's signature)

(Date)

(Type or print parent's name)

ATTESTATION OF WITNESSES

The individual who has executed this order appears to be of sound mind, and under no duress, fraud, or undue influence. Upon executing this order, the declarant has (has not) received an identification bracelet.

(Witness's signature)

(Date)

(Type or print witness's name)

(Witness's signature)

(Date)

(Type or print witness's name)

**This form was prepared pursuant to, and in compliance with,
the “Michigan Do-Not-Resuscitate Procedure Act”.**

ANNEX 2

Initial Date: 05/31/2025

Revised Date: 02/25/2026

Section 7-7

“DO-NOT-RESUSCITATE ORDER”
Patient Advocate Consent

This do-not-resuscitate order is issued by _____,
attending physician for _____
(Name of declarant)

I authorize that in the event the declarant's heart and breathing should stop, no person shall attempt to resuscitate the declarant. I understand the full import of this order and assume responsibility for its execution. This order will remain in effect until it is revoked as provided by law.

(Patient advocate's signature) (Date)

(Type or print patient advocate's name)

ATTESTATION OF WITNESSES

The individual who has executed this order appears to be of sound mind, and under no duress, fraud, or undue influence. Upon executing this order, the declarant has (has not) received an identification bracelet.

(Witness's signature) (Date)

(Type or print witness's name)

(Witness's signature) (Date)

(Type or print witness's name)

**This form was prepared pursuant to, and in compliance with,
the “Michigan Do-Not-Resuscitate Procedure Act”.**

ANNEX 3

Initial Date: 05/31/2025

Revised Date: 02/25/2026

Section 7-7

**“DO-NOT-RESUSCITATE ORDER”
Guardian Consent**

This do-not-resuscitate order is issued by _____,
attending physician for _____
(Name of ward)

I authorize that in the event the ward's heart and breathing should stop, no person shall attempt to resuscitate the ward. I understand the full import of this order and assume responsibility for its execution. This order will remain in effect until it is revoked as provided by law.

(Guardian's signature) (Date)

(Type or print guardian's name)

(Physician's signature) (Date)

(Type or print physician's full name)

ATTESTATION OF WITNESSES

The individual who has executed this order appears to be of sound mind, and under no duress, fraud, or undue influence. Upon executing this order, the declarant has (has not) received an identification bracelet.

(Witness's signature) (Date)

(Type or print witness's name)

(Witness's signature) (Date)

(Type or print witness's name)

**This form was prepared pursuant to, and in compliance with,
the “Michigan Do-Not-Resuscitate Procedure Act”.**

ANNEX 4

Electrical Therapy

I. Precautions for all Electrical Therapy

1. Dry the chest-wall if wet or diaphoretic
2. Nitroglycerin paste should be removed; paddles should not be placed over nitroglycerin patches.
3. Avoid placing the paddles over a pacemaker or an implantable cardioverter defibrillator (ICD).
4. Ensure no provider or bystander contact with the patient or the pads during defibrillation.

II. Automatic External Defibrillation (AED)

1. Do NOT apply AED to patient with LVAD, go **LVAD-Procedure Protocol**.
2. The AED shall be applied only to patients found in cardiopulmonary arrest.
3. Interruptions to CPR should be kept to a minimum.
4. The AED should not be used on patients found lying on conductive surfaces or patients in moving vehicles.
5. For all patients, anterior/posterior placement of pads is preferred and should be used, if possible.
6. There are no age or weight limits for AED use.
-  7. In pediatric patients, attenuated pads should be used, if available. If adult pads are used in pediatric patients, pads must be placed in an anterior/posterior configuration.
8. The word "shock" instead of defibrillation shall be used in this section as devices utilize this verbiage.
9. Follow the **Adult or Pediatric Cardiac Arrest-Treatment Protocol**.
10. Stop CPR to analyze patient and shock once, if indicated.
11. Continue CPR immediately after the shock, or immediately if no shock is indicated and continue for 2 minutes (5 cycles) or when AED initiates analysis.
12. If no pulse, analyze the patient and repeat one shock, if indicated.
13. If patient converts to a non-shockable rhythm at any time, continue CPR until AED prompts to check the patient.
14. Should a patient who is successfully defibrillated arrest again, analyze the patient again.



III. Manual Defibrillation

1. Indications:
 - A. Ventricular fibrillation
 - B. Pulseless ventricular tachycardia
 - C. Unstable irregular wide complex tachycardia
2. Technique:
 - A. Turn defibrillator on.
 - B. Apply defibrillator pads according to manufacturer specifications. For all patients, anterior/posterior placement of pads is preferred and should be used, if possible.
 - C. Charge defibrillator to energy level specified in appropriate protocol or according to manufacturer specifications.

- D. Verify shockable rhythm.
 - E. Assure that no one is touching the patient.
 - F. Defibrillate patient.
 - G. Immediately initiate or resume CPR.
 - H. Repeat defibrillations at 2-minute intervals if the patient remains in a shockable rhythm per protocol.
 - I. Continue to treat the patient according to the appropriate protocol.
 - J. For refractory v-fib after 3 shocks, consider double sequential defibrillation per **Double Sequential Defibrillation-Procedure Protocol** (MCA Optional Protocol)
 - K. If a second monitor/defibrillator or AED is NOT available, consider a vector change:
 - a. If pads are in the anterior/posterior position: apply a new set of pads in the anterior/lateral position.
 - b. If pads are in the anterior/lateral position: apply a new set of pads in the anterior/posterior position.
 - L. If a shockable rhythm remains following a 4th defibrillation of any type, contact medical control for potential early transport.
3. Precautions
- A. If visible muscle contraction of the patient did not occur, defibrillation did not occur, check equipment.
 - B. If pediatric pads were used with an AED prior to ALS management, continue using AED or use ALS monitor with appropriate pads. Do not use attenuated pediatric AED pads with an ALS monitor.



IV. Synchronized Cardioversion

- 1. Indications: Hemodynamically unstable patient with the following rhythms:
 - A. Regular Wide Complex Tachycardia (Presumed Ventricular Tachycardia).
 - B. Narrow Complex Tachycardia (Supraventricular Tachycardia (SVT) or Atrial Fibrillation with a rapid ventricular response).
- 2. Contraindications: Heart rate < 150 unless ordered by Medical Control
- 3. Technique:
 - A. Consider IV sedation per **Patient Procedural Sedation-Procedure Protocol**.
 - B. Turn on defibrillator (monophasic or biphasic)
 - C. Attach monitor leads to the patient and ensure proper display of the patient's rhythm.
 - D. Turn SYNC on, assure that QRS complex is marked
 - E. Apply defibrillator paddles/pads according to manufacturer specifications.
 - F. Charge defibrillator to energy level specified in appropriate protocol or according to manufacturer specifications.
 - G. Check Rhythm.
 - H. Assure that no one is touching the patient.
 - I. Cardiovert patient
 - J. Recheck pulse and rhythm.
 - K. If rhythm does not convert, repeat cardioversion according to the appropriate protocol.

- L. Recheck the “sync mode” after each synchronized cardioversion as many defibrillators default back to unsynchronized mode.
- M. If ventricular fibrillation occurs, deactivate synchronized mode and defibrillate.
- 4. Precautions
 - A. Ensure sync mode has been selected.
 - B. In “sync” mode, the button(s) may need to be held until cardioversion is delivered per manufacturer’s instructions. If cardioversion is not delivered the first time, repeat the sequence per manufacturer’s instructions.
 - C. If a sinus rhythm is achieved by cardioversion, even briefly, and then reverts to previous rhythm, repeat the cardioversion at the same setting as was initially successful.



V. Transcutaneous Pacing (TCP)

- 1. Indications: Symptomatic Bradycardia with inadequate perfusion.
- 2. Technique:
 - A. Monitor rhythm.
 - B. Follow manufacturer’s guidelines for pacing. For some monitors, ECG electrodes must be in place, along with pacing pads or combo-pads, in order for the pacer to function.
 - C. Apply pacing electrodes per manufacturer’s instructions.
 - D. Consider sedation, per **Patient Procedural Sedation-Procedure Protocol**.
 - E. If QRS complexes are present, select a lead in which the QRS is the most positive or upright (so machine can sense their presence).
 - F. Set external pacemaker rate to 60 bpm to begin.
 - G. Initiate pacing and increase milliamp (mA) output until evidence of capture has occurred.
 - H. Increase at increments of 20 mA for unconscious patients and 5 mA for conscious patients.
 - a. Use minimal mA needed for mechanical capture.
 - I. Run a rhythm strip and save.
 - J. Assure adequate electrical and mechanical capture.
 - a. Electrical:
 - 1. Visible pacer spike immediately followed by wide QRS and broad T waves.
 - b. Mechanical:
 - 1. Palpable Pulses, improved LOC; improved BP; improved patient color.
 -  K. If mechanical capture is not obtained, contact medical control. Perform CPR if appropriate.
- 3. Contraindications
 - A. Wet environment
 - B. Burns to the chest (relative)

VI. Special Considerations for Electrical Therapy:

- 1. Electrical therapy may not be successful in hypothermic patients.

Airway Management

MCA'S are responsible for training on all airway devices, techniques, securing methods and documentation. All pediatric advanced airway interventions will have a 100% review by the MCA. All cricothyroidotomy procedures will have a 100% review by the MCA.

	MFR	EMT	EMT-A (Specialist)	PARAMEDIC
Basic Airway				
Oropharyngeal Airway	X	X	X	X
Nasopharyngeal Airway	X	X	X	X
Bag-Valve-Mask Ventilation	X	X	X	X
Oral Suctioning	X	X	X	X
CPAP		X	X	X
Advance Airway-Supraglottic				
i-Gel (Adult sizes)	MCA Selection Required	X	X	X
i-Gel (Pediatric sizes)				X
Air-Qsp3 or AirQsp3G (Adult sizes only patients > 35 kg)		X	X	X
LMA Supreme (Adult sizes ONLY)		X	X	X
King (Adult sizes ONLY)		X	X	X
Advance Airways Paramedic Only				
Oral Endotracheal Intubation				X
Needle / Surgical Cricothyroidotomy				MCA Selection Required
Tracheal Suctioning				X
Monitoring				
Waveform capnography		MCA Selection Required	X	X
Numeric capnometry		X	X	X
Colorimetric capnometry	X	X	X	X

Management Overview

1. Maintain a patent airway
2. Provide effective oxygenation and adequate ventilation using the least invasive possible method to achieve those goals paired with pulse oximetry and end-tidal capnography (EtCO₂) data
3. Anticipate, recognize, and alleviate respiratory distress
4. Provide necessary interventions quickly and safely to patients with the need for respiratory support
5. Anticipate, identify, and plan for a potentially difficult airway
6. Optimize the patient for any advanced airway attempt

Indications

1. Airway obstruction
2. Need for positive pressure ventilation
 - a. Respiratory or cardiac arrest (including agonal respirations)
 - b. Respiratory failure (inadequate respiratory rate/volume)
3. Airway protection, such as an unconscious patient without a gag reflex.
4. Trauma patient with a Glasgow Coma Score of 8 or less.
5. Patients with signs of severe respiratory distress/respiratory failure
6. Patients with evidence of hypoxemia or hypoventilation with medical or traumatic etiology

Contraindications

1. Presence of a gag reflex may be a contraindication to some specific airway interventions.
2. Specific supraglottic airways may have contraindications due to caustic ingestion or known esophageal varices.

Pediatrics

1. Pediatric patients should not be intubated UNLESS efforts to manage the airway from least invasive methods (OPA, NPA, BVM) to more invasive airways (supraglottic airways) are ineffective.
2. Refer to MI MEDIC cards for device sizes.

AIRWAY MANAGEMENT

(Basic Airway Management)

1. In cases of foreign body airway obstruction, refer to **Foreign Body Airway Obstruction-Treatment Protocol**.
-  2. Patients with significant respiratory distress should have continuous pulse oximetry.
-  3. Patients with significant respiratory distress should have waveform capnography monitoring for both assessment and for guiding therapy.
4. UNCONSCIOUS PATIENTS
 - a. When the airway is not self-maintained, open the airway using basic maneuvers (chin lift or jaw thrust). Patients with a potential cervical spine injury should have a modified jaw thrust performed attempting to minimize neck flexion and extension.
 - b. Perform oral pharyngeal suctioning as needed to remove body fluids and minimize risk of aspiration. When possible, suctioning should be limited to no more than 15 seconds and should not extend beyond the pharynx.
 - c. In unconscious patients without a gag reflex, insert a properly sized oropharyngeal airway. Immediately remove upon return of gag reflex.
 - d. In unconscious patients with gag reflex, consider insertion of a properly sized nasopharyngeal airway, using water-soluble lubrication when available.
5. CONSCIOUS PATIENTS
 -  a. CPAP should be considered early for patients with severe respiratory distress that do not improve with supplemental oxygen administration (see **Oxygen**

Administration – Procedure Protocol) in accordance with the **CPAP-
Procedure Protocol**

(Positive Pressure Ventilation)

6. In patients requiring bag-valve-mask ventilations, consider inserting both oral and nasopharyngeal airways to optimize ventilations.
7. For patients with respiratory arrest or significant respiratory depression (e.g., adult patient with respiratory rate less than 8 per minute) perform bag-valve-mask (BVM) ventilations.
 - a. Note: BVM ventilations should be performed by 2 rescuers whenever possible. Use supplemental oxygen and reservoir system, focusing on adequate chest rise and ventilations that are not too forceful.
8. Ventilate at an appropriate rate. Avoid hyperventilation. Generally appropriate rates for ventilation are:
 - a. Adults >8 y/o 10 breaths / minute
 -  b. Children 1-8 y/o 20 breaths / minute
 -  c. Infants < 1 y/o 25 breaths / minute
9. A pocket mask or face shield is an acceptable alternative for single rescuer ventilations.
10. When caring for patients with stomas, use pediatric masks over the stoma to achieve seal.
11. For patients with a tracheostomy tube and home ventilator connect BVM (without mask) directly to tracheostomy tube and ventilate at appropriate rates.

(Advanced Airway)

12. Use of sedation to facilitate advanced airway placement is prohibited.
13. In the adult patient (> 14 years of age), providers may consider continuing basic airway management techniques (instead of advanced airway) if the airway is able to be maintained adequately.
-  14. In the pediatric patient ($\leq$ 14 years of age), providers must continue basic airway management, unless the airway is unable to be adequately maintained at which time the provider must move to an advanced airway.
15. Advanced Airways must be:
 - a. Placed in accordance with manufacturer's instructions and/or MCA approved training.
 - b. Confirmed by positive end-tidal CO₂. Refer to **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**
 - c. Confirmed by auscultation for absence of gastric sounds and presence of bilateral lung sounds.
 - i. Additional clinical findings consistent with a properly placed advanced airway include chest expansion, improvement in patient's color, and improvement in pulse oximetry.
 - d. Re-confirmed at frequent intervals throughout the care of the patient, and after each patient movement.

**Michigan
PROCEDURES
AIRWAY MANGEMENT**

Initial Date: 11/15/2012
Revised Date: 12/17/24

Section 7-9

16. Advanced Airways **MUST** have the following documented:

DEVICE SPECIFICS/PLACEMENT	CONFIRMATION	ADDITIONAL
Type of Device: ET/King/i-gel, etc., specify make of device when more than one option approved in the MCA (e.g., Air-Qsp3 vs AirQsp3G)	Type of end tidal CO2 monitoring used: (waveform capnography, numeric only capnometry, colorimetric capnometry)	Method for securing device
Size of Device	Serial readings of capnography/capnometry	Any complications encountered
Visualization of vocal cords (ET only)	Chest rise with ventilation	Gastric decompression if applicable
Number of attempts to place device	Equality of lung sounds	Tracheal suctioning if applicable
Tube measurement (cm) at teeth for ET and all other devices with measurement markings	Absence of epigastric sounds	
Which tube used for ventilation (Combitube)	Ventilation compliance	



17. Supraglottic Airways (SGA) (may be MFR skill per MCA selection)

- a. Each MCA must select at least one state-authorized supraglottic airway for use in their system.
- b. MCAs are responsible for training for all airway devices selected.
 - i. Training **MUST** include:
 1. Procedures, indications, contraindications and securing for the specific device.
 - ii. Training must be submitted to MDHHS.
- c. MCAs selecting more than one supraglottic airway device must maintain and submit to MDHHS, a roster of agencies utilizing non-primary devices.
 - i. A roster of all MFR agencies utilizing i-Gels (regardless if primary MCA SGA) must be maintained by the MCA and submitted to MDHHS.

MCA Selection of SGA Device (Must select at least one and a primary)

Primary MCA SGA	Allowable MCA SGA	
Select ONLY ONE	Select AT LEAST ONE	
☐	☒	i-Gel
☐		☒ MFR use of i-Gel
☐	☒	Air Qsp3/Air Qsp3G
☐	☒	King
☒	☒	Combitube
☐	☒	LMA Supreme

-  18. Orotracheal Intubation under direct laryngoscopy should be considered when less invasive methods are ineffective, or inappropriate.
- Adult patients (> 14 years of age) who do not have a gag reflex, are unable to protect their own airway, require sustained positive pressure ventilation, or are in cardiac arrest.
 -  Pediatric patient ($\leq$ 14 years of age) **MUST** meet **ALL** the following criteria:
 - Do not have a gag reflex and are unable to protect their own airway.
 - Require sustained positive pressure ventilation and all basic airway techniques have been exhausted or proven inadequate (2-person mask ventilation with oropharyngeal airway and/or nasopharyngeal airway, suctioning)
 - Supraglottic airway is unavailable or has been attempted and proven ineffective.
 - Pediatric patient (<14 years of age) refer to MI MEDIC cards for airway device sizes.
-  19. Deep tracheal suctioning may be performed when indicated using sterile technique and suctioning only during withdrawal of catheter.
- Maximum suction time:
 - Adult patients > 14 years of age: maximum 10 seconds
 -  Pediatric patients $\geq$ 1 year of age and $\leq$ 14 years of age: maximum 10 seconds
 -  Pediatric patients < 1 year of age): maximum 5 seconds
-  20. Needle and/or other cricothyroidotomy procedure (per MCA selection) may be performed when:
- Airway compromise from injury is present that prevents ventilation with basic techniques and makes supraglottic airway insertion or orotracheal intubation impractical.
 - The patient needs immediate airway management.
 - A complete airway obstruction that cannot be corrected by any other means (see **Foreign Body Airway Obstruction – Treatment Protocol**)

(Cricothyroidotomy per MCA Selection)

- ☐ NO Cricothyroidotomy
- ☒ Cricothyroidotomy (select all that apply below)
- ☒ Surgical cricothyroidotomy
 - ☒ Needle cricothyroidotomy
 - ☒ MCA approved commercial percutaneous cricothyroidotomy device

-  21. Sedation for tube tolerance following successful tube placement may be indicated in accordance with the **Patient Procedural Sedation-Procedure Protocol**.

Tri-County Emergency Medical Control Authority
MEDICATION SECTION
PROCEDURES
Emergency Airway Supplement – Video Laryngoscopy



Initial Date: 07/16/2024
Revised Date:

Section: 7-9a

Video Laryngoscopy

Video laryngoscopy may be used as an adjunct in oral tracheal intubation. The device used for video laryngoscopy must be approved by the MCA. The device shall be used according to manufacturer instructions. All requirements for endotracheal tube placement and verification shall otherwise be followed per the Airway Management protocol.

Protocol Reference: HEMS, Inc. MCA 7.9(s) Airway Management Supplement – Video Laryngoscopy;
Version: 06/05/2024, MDHHS Approved: 7/16/2024

Initial Date: 05/31/2012

Revised Date: 01/27/2023

Section 7-10

Helmet Removal

Treatment of the injured patient with protective gear presents unique challenges. For preplanned events an emergency action plan that has been discussed prior to the event may provide organized consistent treatment.

1. High Impact Helmets (i.e., motorcycle, car racing)
 - A. Whether the helmet is a closed or open-faced style helmet, the helmet must always be removed.
 - B. Provide constant spinal precautions.
2. Low Impact Helmets WITH Shoulder Pads (i.e., football, ice hockey, etc.)
 - A. In those patients wearing a well-fitted helmet which conforms closely to the patient's head, **unless there is a prearranged agreement between team training/medical staff, EMS providers and the likely receiving facility**, helmet and shoulder pads should be removed as spinal precautions are maintained. Removal of all equipment at the scene provides the best access to the athlete for treatment.
 - B. If prearrangement is in place to keep the helmet and shoulder pads in place the procedure would be as follows (or as determined by agreement):
 1. If the patient is awake and able to protect his/her airway, the helmet should be left in place and the patient should have spinal precautions maintained using the helmet to assist with spinal precautions. The face shield must be removed prior to transport.
 2. If the patient has an altered level of consciousness or, for any other reason, is unable to protect his/her airway, the helmet should be left in place and the patient should have spinal precautions maintained using the helmet to assist with spinal precautions. The face shield should be immediately removed to allow access to the airway.
 3. If the face shield cannot easily be removed for any patient, the helmet and shoulder pads should be removed using in-line stabilization.
 4. If the airway cannot be controlled for any reason with the helmet in place, the helmet and shoulder pads should immediately be removed, using in-line stabilization.
3. Low Impact Helmets WITHOUT Shoulder Pads (i.e., baseball, bicycle, rollerblade, etc.):
 - A. Whether the helmet is a closed or open-faced style helmet, the helmet must always be removed.
 - B. Provide constant spinal precautions.

**Michigan
PROCEDURES**
IMPEDANCE THRESHOLD DEVICE (ITD)
(MCA Optional Protocol)

Initial Date: 5/31/2012

Revised Date: 05/30/2023

Section 7-11

Impedance Threshold Device (ITD) (MCA Optional Protocol)

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

MCA's will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS

Indications:

1. Cardiopulmonary arrest (medical etiology) in patients > 10 kg (22 lbs.)

Contraindications:

1. Cardiopulmonary arrest related to trauma
2. Patients ≤ 10 kg (22 lbs.)

Procedure:

1. Confirm absence of pulse and begin CPR immediately. Assure that chest wall recoils completely after each compression.
2. Using the ITD on a facemask:
 - A. Connect ITD to the facemask.
 - B. Connect ventilation source (BVM) to top of ITD. If utilizing a mask without a bag, connect a mouthpiece.
 - C. Establish and maintain a tight face seal with mask throughout chest compressions. Use a two-handed technique or head strap.
 - D. Do not use the ITD's timing lights during CPR utilizing a facemask for ventilation.
 - E. Perform ACLS interventions as appropriate.
 - F. Prepare for endotracheal intubation.
3. Using the ITD on an endotracheal tube (ET) or Supraglottic Airway Device (SAD):
 - A. Endotracheal intubation is the preferred method of managing the airway when using the ITD.
 - B. Place endotracheal tube or SAD and confirm placement with end tidal capnography and standard techniques (see **Airway Management-Procedure Protocol**). Secure the tube.
 - C. Move the ITD from the facemask to the advanced airway and turn on timing assist lights (remove clear tab).
 - D. Devices should be stacked in this order after tube placement confirmation.
 - a. ET/SAD – ITD - EtCO₂ - BVM

Michigan
PROCEDURES
IMPEDANCE THRESHOLD DEVICE (ITD)
(MCA Optional Protocol)

Initial Date: 5/31/2012

Revised Date: 05/30/2023

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- E. Continue CPR with minimal interruptions:
 - a. Provide continuous (no pauses) chest compressions and ventilate asynchronously over 1 second when light flashes
- F. Perform ACLS interventions as appropriate.
- G. If a pulse is obtained, remove the ITD and assist ventilations as needed.

Special Notes:

1. Always place ETCO₂ detector between the ITD and ventilation source.
2. Administer endotracheal medications directly into endotracheal tube, if indicated.
3. Do not interrupt CPR unless absolutely necessary.
4. If a pulse returns, discontinue CPR and the ITD. If the patient rearrests, resume CPR with the ITD.
5. Do not delay compressions if the ITD is not readily available.
6. Initial training and ongoing competency skills shall be monitored by the agency.

Initial Date: 5/31/2012

Revised Date: 02/17/2026

Section 7-12

Oxygen Administration

Assuring adequate patient oxygenation is a fundamental responsibility of EMS providers at all levels. Supplemental oxygen, when clinically indicated and through the proper delivery system, can have an important impact on patient outcome.

Indications

1. Real or suspected hypoxia
2. Patients in respiratory or cardiac arrest
3. Respiratory distress
4. Chest pain, stroke, seizures, or altered mental status when pulse oximetry is unavailable or when oxygen saturation is less than 94%
5. General trauma (more than isolated trauma). Regardless of pulse oximeter reading, all patients with significant trauma should receive oxygen administration.
6. Shock
7. Suspected carbon monoxide and/or cyanide poisoning (including smoke inhalation) regardless of pulse oximetry value
8. Complicated childbirth
9. Patients who normally use supplemental oxygen as part of their routine care
10. Any condition in which pulse oximetry (when available) is <94%.

Contraindications

1. There are no absolute contraindications to oxygen administration.
2. In general, supplemental oxygen should be guided by pulse oximetry (when available) to maintain oxygen saturations $\geq 94\%$.
3. Patients with COPD may develop a hypoxic drive to breathe. High concentrations of oxygen may suppress their respiratory drive. Oxygen should still be administered when clinically indicated. Providers should monitor for respiratory depression and assist ventilations when indicated.

Procedure

1. Assure the patient has an adequate airway or establish an airway in accordance with the **Airway Management-Procedure Protocol** and whenever possible the patient's head should be elevated up to 30 degrees.
2. In spontaneously breathing patients administer supplemental oxygen by appropriate means.
 - A. Nasal cannula at 2-6 LPM: This is appropriate for most patients with mild to moderate hypoxia and minimal or no respiratory distress. Most patients tolerate nasal cannulas.
 - B. Non-rebreather (NRB) mask at 10-15 LPM (adjust flow rate to keep reservoir bag inflated). A NRB should be used on all spontaneously breathing patients with moderate to severe respiratory distress and all patients with suspected carbon monoxide and/or cyanide poisoning (e.g., smoke inhalation).
 - C. If continuous positive airway pressure (per **CPAP-Procedure Protocol**) is utilized, using a nasal cannula to supplement oxygenation while a patient is on CPAP is acceptable, if seal remains adequate.

Michigan
PROCEDURES
OXYGEN ADMINISTRATION

Initial Date: 5/31/2012

Revised Date: 02/17/2026

Section 7-12

3. In patients not breathing or breathing inadequately
 - A. Use a bag-valve-mask with two rescuers when available to provide ventilations with oxygen connected at 15 LPM. See **Airway Management-Procedure Protocol**.
 - i. Maintain face seal with one rescuer with two hand technique.
 - ii. Utilize second rescuer to ventilate every six seconds.
 - B. Passive oxygenation via nasal cannula may be used to augment bag-valve-mask ventilations before advanced airway placement.
4. Augment rapid but ineffective respiration with BVM and/or CPAP as applicable.
5. Pediatric "blow-by" oxygen is an ineffective means of delivering supplemental oxygen to pediatric patients and should be avoided when possible. Pediatric nasal cannulas are well tolerated by most children. When using, blow-by technique, keep mask as close to face as possible and use high flow (e.g., ~15 LPM).
6. When caring for patients with stomas, use pediatric size masks.

Initial Date: 11/15/2012
Revised Date: 02/10/2026

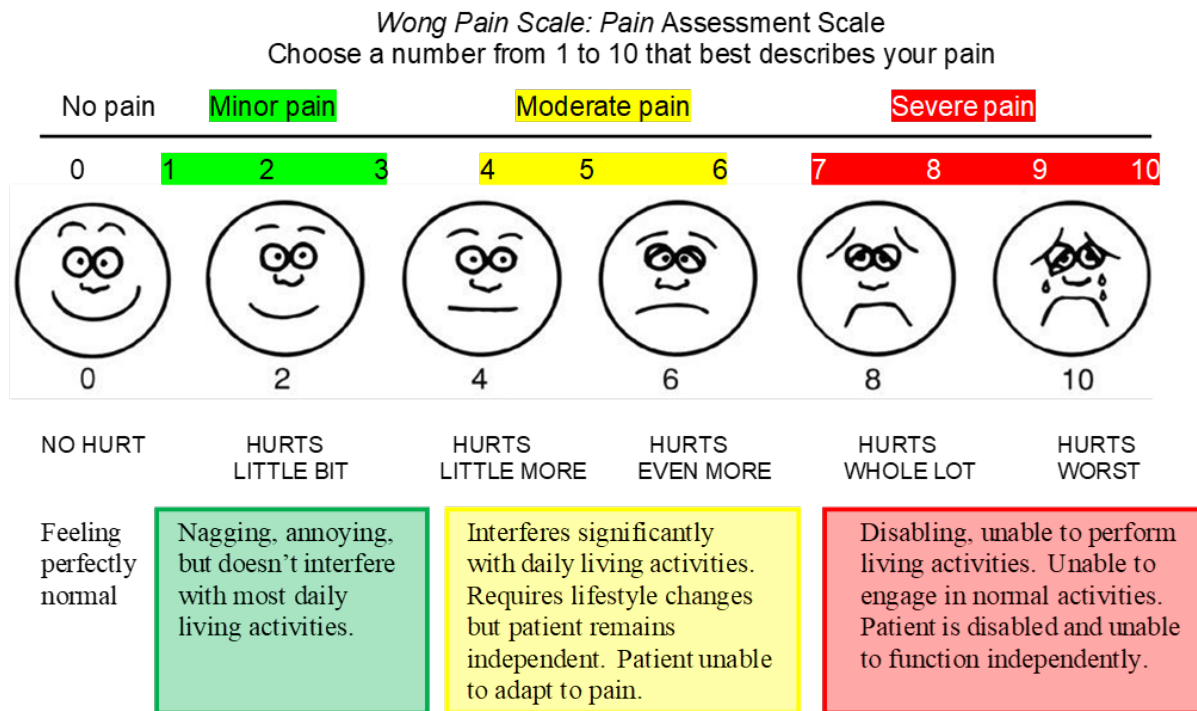
Section: 7-13

PAIN MANAGEMENT

For patients with suspected cardiac chest pain, refer to the **Chest Pain/Acute Coronary Syndrome Treatment Protocol**.

Patient care provided under this protocol is focused on reducing the level of pain for patients in the prehospital setting.

All pain should be assessed and scored using the “Wong Pain Scale.” Reassessment should be timed according to medication onset of action, changes in patient condition, patient positioning, and other treatments. Pain treatment should be based on pain scale but may need modification based on patient assessment and/or condition.



 **Note:** Medical Control contact is required for patients with special circumstances such as having an established care plan that deters pain management or having an established pain management care plan that differs in dose or administration from this protocol.

1. Place the patient in a position of comfort.
2. Verbally reassure the patient to control anxiety.

**Michigan
PROCEDURES
PAIN MANAGEMENT**

Initial Date: 11/15/2012
Revised Date: 02/10/2026

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3. Administer basic interventions per applicable protocol (e.g., positioning, splinting, ice, etc.). If pain does not improve with basic interventions, consider analgesia.
-  4. Start an IV if required for medication administration, or per applicable treatment protocol. Refer to **Vascular Access & IV Flued Therapy Procedure Protocol**.
5. For pediatric patients (< 14 years), utilize MI MEDIC for appropriate medication dosage. When unavailable utilize pediatric dosing listed within protocol.
-  6. Per MCA selection, for mild to moderate pain (described as a 1-6 on the Wong Pain Scale), consider non-opioid analgesia.
7. For patients with suspected kidney stone pain at any level, ketorolac should be the first line medication if available.

MCA Selected Non-Opioid Analgesia
(MCA must select at least one)

- ☒ **Acetaminophen:**
 1. Adults (patients > 14 years of age), administer 650 mg PO
 2. Pediatrics refer to MI MEDIC. When MI MEDIC is unavailable refer to dosing table below.
- ☒ **Ibuprofen**
 1. Adults (patients > 14 years of age), administer 400 mg.
 - a. Do NOT use in pregnant patients.
 2. Pediatrics (patients > 6 months of age and ≤ 14 years of age), refer to MI MEDIC. When MI MEDIC is unavailable refer to dosing table below.
- ☒ **Ketorolac (Toradol ®)**
 1. Adults (patients > 14 years of age), administer 15 mg IM/IV.
 - a. Do NOT use in pregnant patients.
 2. Pediatrics (patients > 5 years of age and ≤ 14 years of age refer to MI MEDIC. When MI MEDIC is unavailable administer 0.5 mg/kg IM/IV (max dose 15 mg)

Children's Elixir Dosing Table			
Child's Weight	Child's Age	Acetaminophen 160 mg/5mL	Ibuprofen 100 mg/5mL
3-5 kg (6-12 lbs.)	0-2 mos.	1.25 mL (40 mg)	DO NOT GIVE
6-7 kg (13-16 lbs.)	3-6 mos.	3 mL (96 mg)	DO NOT GIVE
8-9 kg (17-20 lbs.)	7-10 mos.	4 mL (128 mg)	4 mL (80 mg)
10-11 kg (21-25 lbs.)	11-18 mos.	5 mL (160 mg)	5 mL (100 mg)
12-14 kg (26-31 lbs.)	19 mos.-35 mos.	6 mL (192 mg)	6 mL (120 mg)
15-18 kg (32-40 lbs.)	3-4 yrs.	7 mL (224 mg)	7.5 mL (150 mg)

**Michigan
PROCEDURES
PAIN MANAGEMENT**

Initial Date: 11/15/2012
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19-23 kg (41-51 lbs.)	5-6 yrs.	9 mL (288 mg)	9.5 mL (190 mg)
24-29 kg (52-64 lbs.)	7-9 yrs.	12 mL (384 mg)	13 mL (260 mg)
30-36 kg (65-79 lbs.)	10-14 yrs.	15 mL (480 mg)	15 mL (300 mg)

8. Patients with severe pain (described as >7 on the Wong Pain Scale) that receive ketamine or opioid analgesia require additional monitoring and administration considerations.
- Continuous pulse oximetry monitoring.
 - Continuous capnography monitoring.
 - IV/IO administration must be performed slowly.
 - IM administrations are single dose. No additional doses or other pain management medications may be administered.
9. For patients with severe pain (described as a 7 or greater on the Wong Pain Scale), consider ketamine if applicable per MCA selection.

MCA Selection for **Ketamine** use in pain management



☐ **Ketamine** not permitted.
☐ Contact Medical Control prior to **Ketamine** administration
☒ Administer **Ketamine**

10. Ketamine for pain management given IV/IO should be diluted in 100 ml normal saline and administered via slow infusion over 5-10 minutes to avoid dissociation symptoms.
11. Ketamine may be administered IV/IO/IN as listed below.
- Adults (patients > 14 years of age):
 - 0.2 mg/kg IV/IO (diluted in 100 ml NS), maximum single dose 25 mg.
 - 0.5 mg/kg IN, maximum single dose 50 mg.
 - May be repeated one time, at least 10 minutes after initial dose.
 - DO NOT administer Ketamine to patients who are pregnant or suspected of being pregnant.
 -  Pediatrics (>6 years of age and <14 years of age) refer to MI MEDIC. If MI MEDIC is unavailable:
 - 0.2 mg/kg IV/IO (diluted in 100 ml NS), maximum single dose 25 mg.
 - 0.5 mg/kg IN, maximum single dose 50 mg.
 - May be repeated one time, at least 10 minutes after initial dose.

**Michigan
PROCEDURES
PAIN MANAGEMENT**

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- c. Pediatrics (>6 months of age and <6 years of age) refer to MI MEDIC. If MI MEDIC is unavailable:
- 0.5 mg/kg IN.
 - May repeat one time, at least 10 minutes after initial dose.

Color	Weight	Child's Age	Dose	Volume	Route	Special Instructions
Ketamine concentration 100mg / 1mL						
Purple	10-11 kg (21-25 lbs.)	11-18 mos.	10 mg	0.1 mL	IN	
Yellow	12-14 kg (26-31 lbs.)	19-35 mos.	10 mg	0.1 mL	IN	
White	15-18 kg (32-40 lbs.)	3 – 4 yrs.	10 mg	0.1 mL	IN	
Blue	19-23 kg (41-51 lbs.)	5 – 6 yrs.	20 mg	0.2 mL	IN	
Orange	24-29 kg (52-64 lbs.)	7 – 9 yrs.	30 mg	0.3 mL	IN	Divide dose equally between nostrils.
Green	30-36 kg (65-79 lbs.)	10 – 14 yrs.	30 mg	0.3 mL	IN	Divide dose equally between nostrils.
		10 – 14 yrs.	10 mg	1.0 mL in 100 mL NS	IV or IO	Mix dose in 100 mL NS, administer over 10 minutes.
Black	> 36 kg (> 80 lbs.)	> 14 yrs.	30 – 50 mg	0.3 – 0.5 mL	IN	Divide dose equally between nostrils.
		> 14 yrs.	10 – 20 mg	0.1 mL in 100 mL NS	IV or IO	Mix dose in 100 mL NS, administer over 10 minutes.



12. For patients with refractory pain after ketamine administration, contact medical control prior to opioid administration.



13. If ketamine has not been administered and the patient has significant pain (described as 7 or greater on the Wong Pain Scale), opioid analgesia may be administered per MCA selection.

- Patients should receive only one opioid medication.
- If an IV is not available, a single dose may be given IM.



- Do not administer additional pain medications after IM administration without online medical direction.

14. Administer opioids slowly when using IV or IO routes. Systolic BP should be maintained at >100 mmHG for adult patients and >80 + (2 x age) mmHg for pediatric patients.



15. For patients with evidence of hypotension or hypoperfusion, contact medical control.

16. For patients with refractory pain after opioid administration, contact medical control prior to the administration of additional medications.

17. For patients who are pregnant or suspected of being pregnant:

- Optimize non-pharmacologic interventions as directed above in #3.
- For mild to moderate pain, use acetaminophen as above.

**Michigan
PROCEDURES
PAIN MANAGEMENT**

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Revised Date: 02/10/2026

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- c. For severe pain (greater than 7 on the Wong Pain Scale), administer opioid as below. Administer IV/IO slowly, titrating to lowest dose needed to reduce pain score to less than 7.
 - d. Opioids should not be used for labor pain.
18. If associated nausea, refer to **Nausea and Vomiting Treatment Protocol**.

MCA Selected Opioid Analgesia
(Must select at least one)



Morphine

- 1. Adults (patients > 14 years of age), administer 0.1 mg/kg IV/IO/IM (maximum single dose 5 mg).
 - a. IV/IO may repeat three times (total of four doses). Total dose may not exceed **20 mg**. Interval between doses is minimally 10 minutes.
 - b. If IM administration, may NOT repeat.
- 2. Pediatrics (patients > 18 months of age and ≤ 14 years of age), refer to MI MEDIC. When MI MEDIC is unavailable, administer 0.1 mg/kg IV/IO/IM (maximum single dose 5 mg).
 - a. IV/IO may repeat three times. Total dose may not exceed 20 mg. Interval between doses is minimally 10 minutes.
 - b. If IM administration may NOT repeat.
- 3. Do NOT administer Morphine to children ≤ 18 months of age.



Fentanyl

- 1. Adults (patients > 14 years of age), administer 1 mcg/kg IV/IO/IM/IN dosage, rounded as per below:
 - a. Up to and including 25 kg - administer 25 mcg
 - b. 26-50 kg – administer 50 mcg
 - c. 51-75 kg - administer 75 mcg
 - d. 76 kg and above – administer 100 mcg
 - e. IV/IO/IN may repeat one-time, total dose may not exceed 200 mcg. Interval between doses is minimally 10 minutes.
 - f. If IM administration may NOT repeat
- 2. Pediatrics (patients ≤ 14 years of age), refer to MI MEDIC. When MI MEDIC is unavailable, administer 1 mcg/kg IV/IO/IM/IN
 - a. May repeat IV/IO/IN one time. Interval between doses is minimally 10 minutes.
 - b. If IM administration may NOT repeat

If an IV is not available, a single dose of opioid may be given IM. **DO NOT ADMINISTER ADDITIONAL PAIN MEDICATIONS** after IM administration without online medical direction.

**Michigan
PROCEDURES
PAIN MANAGEMENT**

Initial Date: 11/15/2012
Revised Date: 02/10/2026

Section: 7-13

Medication Protocols: Acetaminophen, Fentanyl, Ibuprofen, Ketamine, Ketorolac, Morphine

Initial Date: 5/31/2012

Revised Date: 05/30/2023

Section 7-14

Patient Assessment

Scene Size Up and General Impression

1. Recognize environmental hazards to rescuers, and secure area for treatment.
2. Recognize hazard for patient and protect from further injury.
3. Identify number of patients. Follow the **Mass Casualty Incident-Special Operations Protocol** if appropriate.
4. Observe position of patient, mechanism of injury, surroundings.
5. For pediatric patients, utilize the Pediatric Assessment Triangle.
6. Identify self.
7. Utilize universal precautions in all protocols.
8. Determine if patient has a valid Do-not-resuscitate bracelet/order or a valid MI POST.

Primary Survey

1. Airway:
 - A. Protect spine from movement in trauma victims. Provide continuous spinal precautions. Follow the **Spinal Injury Assessment-Treatment Protocol**.
 - B. Observe the mouth and upper airway for air movement.
 - C. Establish and maintain the airway. Follow the **Airway Management-Procedure Protocol**.
 - D. Look for evidence of upper airway problems such as vomitus, bleeding, facial trauma, absent gag reflex.
 - E. Clear upper airway of mechanical obstruction as needed.
2. Breathing: Look, Listen and Feel
 - A. Note respiratory rate, noise, and effort.
 - B. Treat respiratory distress or arrest with oxygenation and ventilation.
 - C. Observe skin color and level of consciousness for signs of hypoxia.
 - D. Expose chest and observe chest wall movement, as appropriate.
 - E. Look for life-threatening respiratory problems and stabilize.
 -  F. Tension pneumothorax: Follow **Pleural Decompression-Procedure Protocol**.
3. Circulation
 - A. Check pulse and begin CPR if no central pulse. Follow **Pediatric or Adult Cardiac Arrest-Treatment Protocol** or **Newborn and Neonatal Assessment and Resuscitation-Treatment Protocol**.
 - B. Note pulse quality and rate; compare distal to central pulses as appropriate.
 - C. Control hemorrhage by direct pressure. (If needed, use elevation, pressure points or follow the **Tourniquet Application-Procedure Protocol** and/or **Bleeding Control-Treatment Protocol**.)
 - D. Check capillary refill time in fingertips.
 - E. If evidence of shock or hypovolemia begin treatment according to **Shock-Treatment Protocol**.
4. Level of consciousness:
 - A. Note mental status (AVPU)
 - a. Alert
 - b. Verbal stimuli response
 - c. Painful stimuli response

Michigan PROCEDURES PATIENT ASSESSMENT

Initial Date: 5/31/2012

Revised Date: 05/30/2023

Section 7-14

d. Unresponsive



B. Measure Glasgow Coma Scale

Patient age > 2 years old

Patient age < 2 years old

Eye opening

Spontaneous	4	Spontaneous
To speech	3	To speech
To Pain	2	To Pain
No response	1	No response

Verbal response

Oriented and talking	5	Smiles, recognizes sounds, follows objects, interacts
Disoriented and talking	4	Cries, consolable, inappropriate interactions
Inappropriate words	3	Inconsistently inconsolable, moaning
Incomprehensible sounds	2	Agitated, restless, inconsolable
No response	1	No response

Motor response

Obeys command	6	Spontaneous movement
Localizes pain	5	Withdraws from touch
Withdraws to pain	4	Withdraws from pain
Flexion to pain	3	Abnormal flexion to pain (decorticate posturing)
Extension to pain	2	Abnormal extension to pain (decerebrate posturing)
No response	1	No response

Any combined score of less than eight represents a significant risk of mortality.

If the patient is not alert and the cause is not immediately known, consider:

A – Alcohol
E – Epilepsy
I – Insulin
O – Overdose
U – Uremia

T – Trauma
I – Ingestion
P – Psych
P – Phenothiazine
S – Salicylates

C – Cardiac
H – Hypoxia
E – Environmental
S – Stroke
S - Sepsis

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5. The secondary survey is performed in a systematic manner.
(Steps listed are not necessarily sequential.)

A. Vital Signs:

- a. Frequent monitoring of blood pressure, pulse, and respirations
- b. Temperature as appropriate and as indicated in protocol.
-  c. Blood glucose measurement as appropriate and as indicated by protocol. (May be MFR sill, see **Blood Glucose Testing-Procedure Protocol**).
-  d. Pulse oximetry as appropriate and as indicated by protocol.
-  e. ECG monitoring as appropriate and as indicated in protocol.
-  f. 12 Lead as appropriate and as indicated by protocol (Per MCA selection, may be a BLS or Specialist procedure) follow **12 Lead ECG-Procedure Protocol**.
-  g. Monitor capnography as appropriate and as indicated by protocol (refer to **End Tidal Carbon Dioxide Monitoring-Procedure Protocol**)

B. Head and Face

- a. Observe and palpate for deformities, asymmetry, bleeding, tenderness, or crepitus.
- b. Recheck airway for potential obstruction: upper airway noises, dentures, bleeding, loose or avulsed teeth, vomitus, or absent gag reflex.
- c. Eyes: pupils (equal or unequal, responsiveness to light), foreign bodies, contact lenses, or raccoon eyes
- d. Ears: bleeding, discharge, or bruising behind ears.

C. Neck

- a. Maintain spinal precautions; follow the **Spinal Precautions-Procedure Protocol**, if appropriate.
- b. Check for deformity, tenderness, wounds, jugular vein distention, and use of neck muscles for respiration, altered voice, and medical alert tags.

D. Chest

- a. Observe for wounds, air leak from wounds, symmetry of chest wall movement, and use of accessory muscles.
- b. Palpate for tenderness, wounds, crepitus, or unequal rise of chest.
- c. Auscultate for bilateral breath sounds.
- d. Capnography/capnometry according to protocol

E. Abdomen

- a. Observe for wounds, bruising, distention, or pregnancy.
- b. Palpation.

F. Pelvis

- a. Palpate pelvis for tenderness and stability

G. Extremities

- a. Observe for deformity, wounds, open fractures, and symmetry.
- b. Palpate for tenderness and crepitus.
- c. Note distal pulses, skin color, and medical alert/DNR tags.
- d. Check sensation.
- e. Test for motor strength if no obvious fracture present.

H. Back

- a. Observe and palpate for tenderness and wounds.

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Special Considerations:

1. If there is a specific mechanism of injury with only localized injury, a focused exam may be performed in lieu of the full patient survey provided the patient is alert.
2. Follow the appropriate protocol, per patient condition:
 - A. **General Pre-hospital Care-Treatment Protocol**
 - B. **Newborn and Neonatal Assessment and Resuscitation Treatment Protocol**
 - C. **Cardiac Arrest-Treatment Protocol**
 - D. **Pediatric Cardiac Arrest-Treatment Protocol**
 - E. **General Trauma-Treatment Protocol**
 - F. **Spinal Precautions-Procedure Protocol**
 - G. **Crashing Adult/Impending Arrest-Treatment Protocol**
 - H. **Crashing Pediatric Patient/Impending Arrest-Treatment Protocol**

Documentation and Patient Care Records

Purpose: Patient care records (PCR) are legal documents and a part of a patient's medical record. EMS Personnel must be accurate and thorough in their documentation of EMS incidents. This protocol defines the MINIMUM elements to be included in a patient care record.

I. Completion of records

- A. An electronic EMS PCR must be completed on any request for service to which a life support agency (per MCA selection):

☒	is dispatched
☐	arrives on scene

Regardless of MCA selection, this includes all emergency and non-emergency EMS incidents and patients, ambulance inter-facility transfers, patient refusals, other patient contact, no patient found and cancellations.

- B. For responses that do not necessitate an EMS PCR, an alternative form of electronic documentation must be maintained (e.g., computer aided dispatch).
- C. If a patient is evaluated and/or treated and is not transported, a Refusal of Treatment and/or Transport Evaluation Form must be completed and a patient signature obtained per **Refusal of Care; Adult & Minor-Procedure Protocol**.
- D. Personnel completing PCRs must do so in a timely fashion. If an electronic record is not transmitted immediately upon leaving the receiving facility, an MCA approved paper form must be left at the receiving facility which includes at least the following:
1. Patient demographic information
 2. Patient and history or medications obtained
 3. Vital signs and assessment information
 4. Any interventions performed
 5. Any diagnostics performed
- E. Patient care records must be completed within 24 hours of incident conclusion. If changes or documentation must be completed after 24 hours, an addendum to the record noting the circumstances must be created.

II. Documentation

- A. Electronic PCRs must be created on appropriate software as outlined in **Electronic Documentation & EMS Information-System Protocol**.
- B. Non-transporting agencies will turn over an MCA approved written report or field note, if available, to the transporting agency.
- C. Each PCR (regardless of patient type) should include:
1. All demographic, response and other general information pertinent to the EMS personnel's actions related to the response or transfer.
 2. Patient care information including:
 - a. Assessment findings, including EMS obtained vital signs. If a patient refuses EMS vitals, that refusal must be documented in the PCR.

- b. Available patient history (including current medications and allergies).
- c. Treatment and interventions (including who performed the intervention). For interventions that are performed prior to arrival, document as such, and attribute to appropriate other personnel.
- d. Medications administered (including dose, route, and personnel administering). For medications that are administered prior to arrival, document as such, and attribute to appropriate other personnel.
- e. Changes in patient status (or lack of change)
- f. Narrative including elements and descriptors unable to be documented in other sections of the PCR. *Note: treatments, vitals, interventions, and medications must be included in the applicable data fields (e.g., flowchart), but may also be included in the narrative of the report, as appropriate.
- 3. Names and licensure level of each responder present on scene.
- 4. Signature of the personnel responsible for the documenting the encounter.
- D. Specific requirements for other types of PCRs include all the above, plus:
 - 1. For transported patients, at least two sets of EMS obtained vital signs based on patient condition and complaint. If less than two sets of vitals are recorded, documentation must be provided justifying the omission.
 - 2. For patients transported with time sensitive emergencies (suspected stroke, myocardial infarction, trauma):
 - a. Symptom onset time (last know well time, time of injury)
 - b. Vitals/assessment specific to the complaint:
 - i. 12 Lead ECG (included as an attachment)
 - ii. Cincinnati Stroke Scale (or other MCA approved pre-hospital stroke scale)
 - iii. Physical assessment (noted types and locations of injuries)
 - iv. Mechanism of injury (including specific elements allowable such as vehicle information), as appropriate
 - 3. Patient transfer of care between life support agencies.
- E. If a PCR must first be generated on paper and entered secondarily into an electronic format:
 - 1. Content must be directly copied from the original PCR to the electronic system
 - 2. Ideally, a scanned copy of the paper record must be attached to the electronic PCR. Otherwise, a paper copy must be maintained (according to MCL 333.16213) and available to the jurisdictional MCA or the Department upon request.
 - 3. If someone other than the original caregiver inputs the PCR into the electronic system, it must be noted in the record.

III. Confidentiality

- A. The EMS patient care record is a confidential patient care document and is not to be released to anyone other than those involved in the patient's care or the MCA's Professional Standards Review Organization, without the patient's written release of information permission. Refer to **Protected Health Information (PHI)-Procedure Protocol**

Patient Restraint

Purpose: To ensure appropriate and safe restraint of patients whose behavior is suggestive of an imminent physical threat to personnel and/or themselves.

Pediatric patients (< 14 years) utilize **MI MEDIC** or appropriate medication dosage. When unavailable utilize pediatric dosing listed within this protocol.

Indications:

1. When an ill or injured person who is behaving in such a manner as to interfere with their examination, care and treatment to the extent they endanger their life or the safety of others.
2. The patient has a clear or suspected inability to understand their medical situation and the need for treatment of a potentially life-threatening injury or illness.

Escalation of Care:

1. Verbal de-escalation
2. Physical management and soft restraints
3. Physical management and pharmacological management

Verbal De-Escalation is defined as the use of communication or other techniques during an encounter to stabilize, slow, or reduce the intensity of a potentially violent situation without using physical force, or with a reduction in force. This should be continued throughout care.

Soft Restraint Procedure

1. When the placement of soft restraints requires physical management that poses risk to the patient and/or personnel, anticipate and prepare for physical management and pharmacological management.
2. Ensure that enough personnel are available to properly control the patient and establish the restraints.
3. Explain the purpose of the restraints.
4. Physically control the patient and apply restraints.
5. Complete primary and secondary assessments.
 - A. Restrained extremities should be evaluated for pulse quality, capillary refill time, color, sensory and motor function continuously
 - a. Restraints must be adjusted if any of these functions are compromised.
 - b. Restraints must not interfere with medical treatment.
6. Attempt to identify common physical causes for patient's abnormal behavior.
 - Hypoxia
 - Hypoglycemia
 - Head Trauma
 - ETOH/ Substances use/ abuse
7. Patient should be secured to a backboard or stretcher only. Patients must never be secured directly to a vehicle or immovable object. Patients must NEVER be secured in a prone position.

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8. Transport patient.

9. Inform hospital that restraints are in place and assistance will be necessary to continue restraint of the patient.



Pharmacological Management Procedure

1. Pharmacological management should only be utilized when soft restraint placement alone would pose a safety risk or is ineffective in calming the patient



2. Contact Medical Control prior to medication administration, unless extreme circumstances exist in which delaying administration poses an immediate danger to patient or others.

3. Administer **midazolam** 0.1 mg/kg IM or IN

a. Adult patients (>14 years of age) maximum dose of 10 mg

i. Consider lower range of dosing for Geriatric patients.



b. Pediatric patients (≤14 years of age), administer 0.1 mg/kg IM, maximum single dose 5mg.

4. Monitor vital signs, ECG, pulse oximetry, and capnography.



5. If after 10 minutes additional medication is necessary, contact Medical Control for guidance.

Transport Considerations

1. Patients that are physically restrained and/or pharmacologically managed should be transported to the closest appropriate facility.
2. Receiving facilities should be notified as soon as possible of physical restraint use and/or pharmacological management.

Special Considerations

1. Physical restraints should be of a soft nature (e.g., hook and loop restraints, cravats, sheets, etc.) applied to the wrists and ankles. A restraint may also be needed across the chest and/or pelvis and shall NEVER restrict the patient's chest wall motion.
2. Stay with a restrained patient at all times and be observant for possible vomiting and be prepared to turn the patient onto their side and suction if necessary.
3. Documentation should include:
 - A. A description of the circumstance/behavior which precipitated the use of restraints and/or pharmacological management.
 - B. Time of application of the restraints.
 - C. Type of restraint used.
 - D. The positions in which the patient was restrained.
4. When restraint devices are applied by law enforcement officers for patients who are not under arrest:
 - A. If a patient is restrained by law enforcement personnel with handcuffs or other devices EMS personnel cannot remove, a law enforcement officer must accompany the patient to the hospital.
 - B. If the officer is unable to accompany the patient in the transporting EMS vehicle the patient will be placed in soft restraints. This can only occur if crew safety will not be compromised and the patient can be safely transported with this type of

restraint.

C. The restraint and position must not be so restrictive that the patient is in a position that compromises patient care.

5. EMS Personnel may NOT use:

A. Hard plastic ties.

B. Any restraint device that cannot be immediately removed by the attending EMS provider

C. Backboards to "sandwich" the patient.

D. Restraints which secure the patient's hands and feet behind the back.

E. Restraints that "hog tie" the patient.

F. Any device that restricts normal breathing.

6. EMS personnel shall NOT transport a restrained patient in the prone position.



7. Ketamine is NOT to be used as part of this protocol without on-line medical direction.

Medication Protocols

Midazolam

Protocol Source/References:

Authority to Restrain - EMS personnel are able to restrain and treat and transport an individual under authority of Sec 20969 of Public Act 368 which states: *"This part and the rules promulgated under this part do not authorize medical treatment for or transportation to a hospital of an individual who objects to the treatment or transportation. However, if emergency medical services personnel, exercising professional judgment, determine that the individual's condition makes the individual incapable of competently objecting to treatment or transportation, emergency medical services may provide treatment or transportation despite the individual's objections unless the objection is expressly based on the individual's religious beliefs."*

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Patient Procedural Sedation

Paramedic Use Only

Purpose: Proper sedation of patients requiring a painful medical procedure.

Indications for Sedation

1. Electrical therapy (cardioversion or transcutaneous pacing)
2. Post intubation sedation
3. CPAP and/or HFNC only under direct Medical Control Order
 - i. ****Ketamine is NOT to be used for this indication**

Contraindications

1. Inability to control the patient's airway
2. As an adjunct for establishing an airway
3. Known allergy to sedation medications

Assessment

1. Evaluate adequacy of airway, ventilation, and oxygenation
2. Monitor vital signs and level of consciousness
3. Monitor ECG
4. Monitor pulse oximetry
5. Monitor capnography

Procedure

1. Maintain airway, provide oxygenation, and support ventilation
2. Obtain vascular access
3. For electrical cardioversion, transcutaneous pacing, and post intubation sedation sedate patient to a level of consciousness where procedure can be performed, per MCA selection
4. Only one MCA authorized sedation medication may be given pre-radio. Medical Control MUST be contacted if a different sedation medication is needed subsequent to initial dose (adults and pediatrics).

Adult Procedural Sedation: (Titrate to minimum amount necessary)

- ☒ **Midazolam** 1-5 mg (0.05 mg/kg) IV/IO titrated slowly (IN, if available); may repeat once in 5 minutes to a maximum of 0.1 mg/kg.
- ☐ **Diazepam** 5-10 mg (0.1 mg/kg) IV/IO titrated slowly, may repeat every 5 minutes to a maximum of 0.3 mg/kg.
- ☐ **Fentanyl** 50-100 mcg (1 mcg/kg) IV/IO titrated slowly (IN, if available); may repeat every 4 minutes to a maximum of 3 mcg/kg.
- ☒ **Ketamine** 1.5 mg/kg IV/IO (IN, if available) (max dose 150 mg) or 4 mg/kg IM (max dose 400 mg). DO NOT use for CPAP/HFNO sedation.

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5. For pediatrics, administer MCA selected medications per MI MEDIC cards. If MI MEDIC cards are not available administer as follows per MCA selection.

Pediatric Procedural Sedation:

(Titrate to minimum amount necessary)

- ☐ **Midazolam** 0.05 mg/kg IV/IO titrated slowly (IN, if available); may repeat once in 5 minutes to a maximum of 0.1 mg/kg.
- ☐ **Fentanyl** 1 mcg/kg IV/IO titrated slowly (IN, if available); may repeat every 5 minutes to a maximum of 3 mcg/kg.
- ☒ **Ketamine** 1.5 mg/kg IV/IO (IN, if available) (max dose 150 mg) or 4 mg/kg IM (max dose 400 mg). DO NOT use for CPAP/HFNO sedation.

Medication Protocols

Diazepam

Fentanyl

Ketamine

Midazolam

Pleural Decompression



Paramedic Use Only

Indications

1. Suspected Tension Pneumothorax (not simple pneumothorax) with hemodynamic compromise, severe respiratory distress, unilateral absent or severely diminished breath sounds
2. Considered for patients who remain in PEA after treatment of other reversible causes of PEA have been unsuccessful.
3. Traumatic arrest, refer to **Traumatic Arrest-Treatment Protocol**

Presentation of Tension Pneumothorax

1. A tension pneumothorax will have at least one of the following:
 - A. Severe respiratory distress in the conscious/breathing patient with **hemodynamic compromise (hypotension)**.
 - B. Difficult ventilation in the hypotensive, unconscious/apneic patient in the presence of a confirmed, correctly positioned endotracheal tube.

Technique

1. Evaluate and maintain the airway, provide oxygenation, and support ventilations.
2. Decompression procedure:
 - A. Assemble equipment
 - a. Adults (>14 years of age): large bore IV catheter - 14 gauge or larger and at least 3.5 inches in length (catheter should not have any type of flow restricting valve) OR other MCA approved commercial device, per MCA selection.
 -  b. Pediatrics (≤14 years of age): 18 gauge or 20 gauge over the needle catheter (catheter should not have any type of flow restricting valve) OR other MCA approved commercial device, (per MCA selection).

MCA Approved Commercial Device Use

Adults	Pediatrics
☒ Yes	☒ Yes
☐ No	☐ No

MCA's will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster to MDHHS

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- c. Antiseptic swabs
- d. Dressing and tape
- B. Identify landmarks and insertion site
 -  NOTE: Midclavicular is the preferred site for pediatrics (≤ 14 years of age)
 - a. Anterior axillary at the fourth intercostal space just above the fifth rib.
 - b. Midaxillary at the fourth intercostal space just above the fifth rib.
 - c. Midclavicular (if unable to access axillary) line at the second intercostal space just above the third rib
 -  i. Midclavicular is the preferred site for pediatric patients.
- C. Prep the area with antiseptic swab.
- D. Remove flash chamber cap from IV catheter.
- E. Insert the catheter over the top of the rib until air rushes out. Advance catheter over the needle. Remove needle leaving catheter in place.
- F. Reassess breath sounds and patient's condition (patient's condition should improve almost immediately).
- G. Secure catheter with tape.

NOTE: REMEMBER to go just above the rib due to all of the major structures (arteries, veins, and nerves) which lie below the rib. The closer you stay to the top of the rib, the less chance of complication.

Refusal of Care; Adult & Minor

EMS personnel have an affirmative duty to provide care to any patient presenting to them after a report of an emergency situation.

If during an emergency medical situation, EMS personnel, based on clinical judgement, consider a patient to be incapable of making their own medical decisions, that patient may be considered incapable of competently objecting to treatment or transportation under the law. Religious beliefs that lead a patient to refusal of treatment or transport are the exception. EMSMCL 333.20969 states:

“If emergency medical services personnel, exercising professional judgment, determine that the individual’s condition makes the individual incapable of competently objecting to treatment or transportation, emergency medical services may provide treatment or transportation despite the individual’s objection unless the objection is expressly based on the individual’s religious beliefs.”

When EMS personnel, based on clinical judgement, consider a patient to be "capable," that patient may object to treatment and/or transport.

1. Definition

- A. An individual who is capable to make medical decisions is:
 - a. One who is awake, oriented, and is capable of understanding the circumstances of the current situation. This includes risks, treatments, transport, and alternatives.
 - b. Does not appear to be under the influence of alcohol, drugs or other mind-altering substances or circumstances that may interfere with mental functioning.
 - c. Is not a clear danger to self or others.
 - d. Is 18 years of age or older, or an emancipated minor.
- B. “Emancipated Minor” is one who is married, is on active duty with the Armed Forces of the United States or has been granted emancipation by the court.
- C. A minor is any individual under the age of 18 and who is not emancipated.

2. Procedure for an individual who, in the clinical judgement of the EMS provider is capable to object to treatment and/or transport.

- A. All patients with signs or symptoms of illness or injury shall be offered assessment, medical treatment, and transport by EMS.
- B. Clearly explain the nature of the illness/injury and the need for emergency care or transportation.
- C. Explain possible complications that may develop without proper care or transportation.
-  D. For individuals with signs or symptoms of serious or potentially fatal illness or injury, contact medical control prior to obtaining the patient signature and leaving the scene.

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- E. Request that the individual sign an EMS Refusal Form. If the individual refuses to sign the EMS Refusal Form, attempt to obtain signatures of witnesses (family, bystanders, public safety personnel).
- F. Document assessment and complete approved EMS Refusal Form, including risks of refusal.
- G. Inform the individual that if they change their mind and desire evaluation, treatment, and/or transport to a hospital, to re-contact the emergency medical services system or seek medical attention.
- H. Inability to obtain a signature does not preclude completion of documentation of a refusal.

3. Procedure for the individual who, in the clinical judgement of the EMS provider, is not capable to object to treatment and/or transport.



- A. Contact medical control as soon as practical. and provide all pertinent findings that lead the EMS provider to believe, in their clinical judgement, the patient is not capable to object to treatment and/or transport.
- B. For urgent/life-threatening illness or injury initiate treatment according to applicable protocol and transport for further evaluation and treatment
- C. For non-urgent/non-life-threatening illness or injury transport for further evaluation and treatment after consultation with on-line medical control.
- D. Seek police assistance if needed.

4. Procedure for the individual who, in the clinical judgement of the EMS provider, gains capability to object to transport after treatment has been initiated,



- A. Contact medical control in all cases when a patient (now refusing transport) has been given medications or other advanced treatment by EMS personnel (e.g., glucose, albuterol, naloxone, IV, etc.).
- B. Such patients should be strongly encouraged to seek further evaluation and treatment.
- C. Comply with Section 2 above and document treatment on a patient care record.

5. Procedure for the minor patient objecting to treatment and/or transport



- A. Minor patients are unable to consent or refuse ~~consent~~ for medical care. Such permission can only be provided by the minor's parent or legal guardian.
- B. Treatment and transport for potential life-threatening emergencies will not be delayed by attempts to contact the parent or guardian.
- C. In events when the minor's parent or legal guardian cannot be reached, Contact medical control .

6. Procedure for parent/guardian objecting to treatment and/or transport of the minor patient

- A. All patients with signs or symptoms of illness or injury shall be offered assessment, medical treatment, and transport by EMS.
- B. Clearly explain the nature of the illness/injury and the need for emergency care and/or transportation.

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- C. Explain possible complications that may develop without proper care and/or transportation.
-  D. For individuals with signs or symptoms of illness or injury, contact medical control.
- E. Request that the parent/guardian sign an approved EMS Refusal Form. If the parent/guardian refuses to sign the EMS Refusal Form, attempt to obtain signatures of witnesses (family, bystanders, public safety personnel).
- F. Document assessment and complete an approved EMS Refusal Form.
- G. Inform the parent/guardian that if they change their mind and desire evaluation, treatment, and/or transport to a hospital, to re-contact the emergency medical services system or seek medical attention.

7. Documentation

- A. Document findings that support the clinical judgement of the EMS provider that the patient is capable or incapable to objecting to treatment and/or transport.

Note: A sample EMS Refusal Form has been included on a separate page.

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**SAMPLE EMS REFUSAL FORM
REFUSAL OF TREATMENT, TRANSPORT AND/OR EVALUATION**

PLEASE READ COMPLETELY BEFORE SIGNING BELOW!

Because it is sometimes impossible to recognize actual or potential medical problems outside the hospital, we strongly encourage you to be evaluated, treated if necessary, and transported to a hospital by EMS personnel for more complete examination by a physician.

You have the right to choose to not be evaluated, treated or transported if you wish; however, there is the possibility that you could suffer serious complications or even death from conditions that are not apparent at this time.

By signing below, you are acknowledging that EMS personnel have advised you, and that you understand, the potential harm to your health that may result from your refusal of the recommended care; and, you release EMS and supporting personnel from liability resulting from refusal.

PLEASE CIRCLE THE FOLLOWING THAT APPLY:

I refuse:

EVALUATION

TREATMENT

TRANSPORT

☐ **IF YOU CHANGE YOUR MIND AND DESIRE EVALUATION, TREATMENT, AND/OR TRANSPORT TO A HOSPITAL, YOU MAY RE-CONTACT THE EMS SYSTEM AT ANY TIME.**

Patient's Printed Name _____ Age _____ DOB _____ Phone # _____

Patient's Address _____ City _____ State _____ Zip _____

Signature _____ Relationship, if applicable _____

Witness Signature _____ Date and Time _____ Witness Printed Name _____

BP _____ Pulse _____ Resp. _____ Skin _____ Pupils _____ LOC _____

1. Oriented to person, place, and time? ☐ Yes ☐ No
2. Coherent speech? ☐ Yes ☐ No
3. Auditory and/or visual hallucinations? ☐ Yes ☐ No
4. Suicidal or homicidal? ☐ Yes ☐ No
5. Able to repeat understanding of their condition and consequences of treatment refusal?
☐ Yes ☐ No
6. Narrative: describe reasonable alternatives to treatment that were offered; the circumstances of the call; specific consequences of refusal; and, names of family or witnesses present:

EMS Agency Name _____

Printed Crew Names _____

Signature of EMS Provider _____

Spinal Precautions

Indications & General Guidance

1. Refer to the **Spinal Injury Assessment Protocol**. Patients with a positive spinal injury assessment should have spinal precautions maintained during transport.
2. Major trauma patients who require extrication should have spinal precautions maintained using an extrication device (long backboard or equivalent) during extrication. If sufficient personnel are present, the patient may be log rolled from the extrication device to the ambulance cot during loading of the patient.
3. Patients may remain on the extrication device if the crew deems it safer for the patient considering stability, time and patient comfort considerations. This decision will be at the discretion of the crew.
4. Patients with penetrating traumatic injuries do not require spinal precautions unless a focal neurologic deficit is noted on the spinal injury assessment.
5. An ambulatory patient with a positive spinal injury assessment should have an appropriately sized cervical collar placed. Place the patient directly on the ambulance cot in a supine position or position with least amount of elevation to maintain comfort, limiting movement of the spine during the process.
6. Patients, who are stable, alert and without neurological deficits may be allowed to self-extricate to the ambulance cot after placement of a cervical collar. Limit movement of the spine during the process.
7. Patients over the age of 65 with evidence of a head strike mechanism of injury will have a cervical collar applied even if the spinal injury clinical assessment is negative.

Specific Techniques

1. Cervical Collars
 - A. Cervical collar should be placed on patient prior to patient movement, if possible.
 - B. If no collar can be made to fit patient, towel, blanket rolls, head block or similar device may be used to support neutral head alignment.
 - C. The cervical collar may be removed if interfering with airway management or airway placement, or if causing extreme patient distress.
2. Self-Extrication Procedure
 - A. Patients, who are stable, alert and without neurological deficits may be allowed to self-extricate to the ambulance cot after placement of a cervical collar.
 - B. Limit movement of the spine during the process.
3. Emergency Patient Removal
 - A. Indicated when scene poses an imminent or potential life-threatening danger to patient and/or rescuers, (e.g., vehicle or structure fire).

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- B. Remove the patient from danger while best attempt is made to maintain spinal precautions.
- C. Rapid extrication is indicated when patient condition is unstable (i.e., airway or breathing compromise, shock, unconsciousness, or need for immediate intervention).
- 4. Long Extrication Device (e.g., long backboard, scoop stretcher, basket stretcher)
 - A. Indicated when patient requires spinal precautions and the patient condition prevents self-extrication.
 - B. Patient's head and cervical spine should be manually stabilized.
 - C. Rescuers should place the patient in a stable, neutral position where space is created to place backboard or other long extrication device in position near the patient.
 - D. Move the patient to supine position on the long extrication device.
 - E. The patient is secured to the device with torso straps applied before head stabilization.
 - F. Head stabilization material should be placed to allow for movement of the lower jaw to facilitate possible airway management.
 - G. The extrication device is used to move the patient to the ambulance cot.
- 5. Log Roll Procedure
 - A. Cervical collar should be placed when indicated.
 - B. Place the backboard or equivalent behind the patient.
 - C. Patient is log rolled, maintaining neutral alignment of spine and extremities.
 - D. Log roll procedure requires 2 or more personnel in contact with the patient.
 - E. If log roll is not possible, patient should be moved to board or equivalent while attempting to maintain neutral alignment spinal precautions.
 - F. Patient is secured to the backboard or equivalent for movement to the ambulance cot.
 - G. Head stabilization materials such as foam pads, blanket rolls may be used to prevent lateral motion. Pad under the head when feasible.
 - H. If sufficient personnel are present, the patient should be log rolled from the extrication device to the ambulance cot during loading of the patient.
 - I. When log roll on to the ambulance cot is impractical, secure the patient to the extrication device and ambulance cot for transport.
- 6. Spinal Precautions
 - A. Once the patient is placed on the ambulance cot, if no extrication device is still in place, secure the patient with seatbelts in a supine position, or in position of comfort if a supine position is not tolerated.
 - B. Head may be supported with head block or similar device to prevent rotation if needed. Padding should be placed under the head when practical. Do not tape the head to the ambulance cot.

Special Considerations

1. Hypoventilation is likely to occur with spinal cord injury above the diaphragm. Quality of ventilation should be monitored closely with support offered early.
2. Spinal/neurogenic shock may result from high spinal cord injury. Monitor patient for signs of shock. Refer to **Shock-Treatment Protocol**.
3. Spinal precautions in the patient wearing a helmet should be according to the **Helmet Removal-Procedure Protocol**.
4. Manual spinal precautions in the obtunded patient must be initiated and continued until the patient is secured to the ambulance cot.
5. Patients who are markedly agitated, combative or confused may not be able to follow commands and cooperate with minimizing spinal movement. Rigid immobilization should be avoided if it contributes to patient combativeness. Patients may remain on the backboard if the crew deems it safer for the patient, and this will be at the discretion of the crew.
6. Manual in line stabilization must be used during any procedure that risks head or neck movement, such as endotracheal intubation. If manual cervical stabilization is hampering efforts to intubate the patient, the neck should be allowed to move as needed to secure the airway. An unsecured airway is a greater danger to the patient than a spinal fracture.
7. Document spinal precautions techniques utilized.
8. Document the patient's neurologic status before and after establishing spinal precautions when possible.
9. Pediatric Patients and Car Seats:
 - A. Infants restrained in a rear-facing car seat may be immobilized and extricated in the car seat. The child may remain in the car seat if the immobilization is secure and his/her condition allows (no signs of respiratory distress or shock).
 - B. Children restrained in a car seat (with a high back) may be immobilized and extricated in the car seat; however, once removed from the vehicle, the child should have spinal precautions maintained as for an adult.
 - C. Children restrained in a booster seat (without a back) need to be extricated and immobilized following standard procedures.
10. Pregnant Patients
 - A. Monitor for decreased venous return and if required displace uterus to the left manually or by patient positioning

Initial Date: 02/24/2023
Revised Date:

Section 7-21

Blood Glucose Level Testing

Indications:

1. Altered mental status
2. Indicated in applicable treatment protocol

Contraindications:

1. None



Procedure: (may be MFR skill per MCA selection)

MCA approval for MFR Blood Glucose Level Testing

☒ YES

☐ NO

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

1. Obtain and test blood sample according to manufacturer's instructions.
2. Treat patient according to applicable treatment protocol.
3. Document blood glucose level in electronic patient care record.

Initial Date: 5/31/2012

Revised Date: 05/27/2023

Section 7-22

Tourniquet Application

Indications:

1. Life threatening extremity hemorrhage. An amputation with hemorrhage does not necessitate the use of a tourniquet; most bleeding from these injuries is controllable through use of direct pressure and elevation.
2. Amputation with uncontrolled active bleeding.
3. A mass causality incident may be an indication for the use of tourniquets for temporary control of hemorrhage while the situation is brought under control.

Contraindications:

1. Never use a tourniquet for more than the recommended period of time (product-specific). With any extrication plus transport time of less than 180 minutes, there is minimal risk of developing an ischemic limb.
2. Never apply a tourniquet over an impaled object.

Procedure:

1. If possible, check neurovascular status prior to tourniquet application (pulse, sensation, motor function distal to hemorrhage).
2. Apply tourniquet directly to the skin, proximal to the area of bleeding, at least 2-3 inches (5-8 centimeters) from the wound margins.
3. Secure the tourniquet in place; continue to tighten the tourniquet until arterial occlusion (bleeding stops).
4. A successfully placed tourniquet may cause significant pain. (Refer to **Pain Management-Procedure Protocol**).
5. Document the time the tourniquet was applied.
6. Note neurovascular status every five minutes post application.
7. Notify the receiving hospital that a tourniquet is in place.
8. Do not adjust or remove a tourniquet once bleeding is controlled.
9. A second tourniquet adjacent to the first may be necessary.

Notes:

1. Tourniquets should not be applied over joints. Application over the peroneal nerve (knee or ankle) or ulnar nerve (the elbow) may result in nerve damage or paralysis.
2. Any limb with an applied tourniquet should be fully exposed and the tourniquet should not be covered with any other bandage.
3. Continued bleeding (other than medullary oozing from fractured bones) distal to the site of the tourniquet is a sign of insufficient pressure and a need to tighten the tourniquet further. A second tourniquet adjacent to the first may be necessary. Refer to **Bleeding Control-Treatment Protocol**.
4.  A clinically indicated and appropriately applied tourniquet should not be loosened once applied. If clinical judgement indicates that the tourniquet is not indicated, is nonfunctional or is not appropriate, contact Medical Control prior to removal or loosening.

Protocol Source/References: <https://books.allogy.com/web/tenant/8/books/b729b76a-1a34-4bf7-b76b-66bb2072b2a7/#ida54cbed-5555-47f0-b791-2c86de208f76>

Vascular Access & IV Fluid Therapy

NOTE: Do not access any existing port without direct online medical control approval (such as picc lines, central lines, fistulas, etc).

Indications

1. Patients with potential need for either fluid resuscitation or medication administration.
2. External jugular cannulation should be initiated in patients in whom access is necessary and other peripheral vascular access is not accessible or is contraindicated.
3. IO indications: Adult and pediatric life-threatening situations where venous access using peripheral veins has been unsuccessful. IO access should be considered early in situations where IV access is unsuccessful or technically challenging. Indications include:
 - A. Cardiac Arrest
 - B. Severe burn injury with shock
 - C. Shock
 - D. Severe multi-system trauma with shock
 - E. For other situations contact Medical Control. Do not delay transport.



Contraindications

1. To peripheral vascular access:
 - A. No peripheral sites available
 - B. Burns overlying available peripheral sites unless no other sites available
 - C. Infection overlying available peripheral sites
2. To intraosseous infusion and placement:
 - A. Infiltration of previously placed IO. If infiltration occurs (rare), do not reuse the same bone as fluid will leak out of the original hole; select another site.
 - B. Placement in fractured extremity. If the femur is fractured do not use the tibia of same leg.
 - C. Burns overlying available peripheral sites unless no other sites available
 - D. Infection overlying available peripheral sites
3. To fluid bolus:
 - A. Pulmonary edema
 - a. Contact Medical Control when pulmonary edema is present, yet clinical presentation indicates the need for fluid resuscitation.



Special Considerations (Side effects/Complications)

1. Initiation of vascular access generally should not delay patient transport to the hospital.
2. General side effects or complications: infection, air embolism, catheter shear, hematoma, arterial puncture, and fluid overload.
3. Intraosseous placement:

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- A. Complications include subperiosteal infusion, osteomyelitis, sepsis, fat embolism, and bone marrow damage.

Standards for IV attempts

1. Two (2) attempts per provider, maximum 4 attempts.
2. Consider IO early, as indicated above.
3. Document any reasons for deviation.

Needle size for IV placement

1. Adult 18 ga - 20 ga angiocath
2. Adult uncompensated shock or cardiac arrest 14 ga - 18 ga angiocath.
3. Pediatrics 20 ga - 24 ga angiocath

Solutions – Unless otherwise specified, the IV solution may be **normal saline 0.9% (NS)** or **lactated ringers (LR)**. **NS** is to be used for dilution and/or reconstitution unless otherwise specified in applicable protocol.

Flow Rates and Volume

1. Saline lock is preferred, unless fluid administration is needed.
2. Flow rates, changes in flow rates, and total volume administered must be documented on the EMS Patient Care Record.
3. Fluid Bolus – for fluid resuscitation (i.e., dehydration, hypotension, etc.)
 - a. Adults (>14 years of age): 1 liter IV/IO wide open with repeat of 1 additional liter as necessary (maximum total of 2L), unless otherwise noted by protocol.
 -  b. Pediatrics (≤ 14 years of age): 20 mL/kg IV/IO wide open with repeat of 20 mL/kg as necessary (maximum total of 40 mL/kg), unless otherwise noted by protocol,
4. IV/IO fluid bolus is contraindicated in patients with pulmonary edema.
5. Medicated drips should be piggybacked into a **NS** main IV line or saline lock.
6. Medications should be administered via a saline lock (preferred).
7. If the main IV running is **LR**:
 - a. Prior to administration of any medication, the **LR** IV will be paused.
 - b. The line will be flushed with 5-10 ml of saline flush.
 - c. The medication will be administered.
 - d. The line will be flushed with 5-10 ml of saline flush.
 - e. The **LR** IV will be resumed.

IV Tubing

1. Macro drip is the preferred tubing.

Procedure IV/IO Placement

1. Utilize universal precautions for all IV/IO placements.

Procedure for Peripheral Vascular Cannulation:

1. Gather and prepare equipment.

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2. Place the tourniquet on the extremity.
3. Cleanse the skin
4. Make your puncture while maintaining vein stability.
5. Watch for flashback. Once you have a blood return, advance the catheter as per normal IV technique and attach the IV tubing or saline lock tubing and cap.
6. If you have no blood return and you are in the vein, remove the needle hub and attach your syringe to assist in aspirating for blood.
7. Instill 2-3 mL of normal saline if normal saline lock placed.
8. Secure catheter and IV tubing.

Procedure for External Jugular Cannulation:

1. Gather and prepare equipment
2. Position patient supine (Trendelenburg, if possible)
3. Turn head to opposite side of venipuncture (if no C-spine injury is suspected)
4. Cleanse the skin
5. Occlude the vein by using the side of your finger above the clavicle to facilitate filling the vein.
6. Make your puncture midway between the angle of the jaw and the middle of the clavicle.
7. Watch for flashback. Once you have a blood return, advance the catheter as per normal IV technique and attach the IV solution or normal saline lock cap, covering catheter with gloved finger while preparing to attach the IV tubing. If you have no blood return and you are in the vein, remove the needle hub and attach your syringe to assist in aspirating for blood.
8. Instill 2-3 mL of normal saline if normal saline lock placed.
9. Secure IV catheter and tubing.

Procedure for Intraosseous Placement:

1. Have all IO equipment ready prior to bone penetration.
2. Expose the extremity.
3. Stabilize the extremity to minimize motion.
4. Selection of site:
 - A. Medial aspect of proximal tibia or proximal humerus.
 - B. In children less than six years of age, the preferred site is the proximal tibia.
 - C. In cardiac arrest, the preferred site is the proximal humerus.
5. Insertion:
 - A. Follow the manufacturer's recommendations for IO insertion with the above indications.
6. Scrub the insertion site with alcohol prep/chlorhexidine. Strict adherence to aseptic technique is essential.
7. Insert the IO needle.
8. Attempt to confirm marrow placement by removing the stylet and aspirating blood and/or bone marrow.
 - A. If unable to aspirate, attach 10 – 20 mL syringe with **NS** and gently infuse fluid.

Michigan
PROCEDURES
VASCULAR ACCESS & IV FLUID THERAPY

Initial Date: 05/31/2012
Revised Date: 03/17/25

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- B. Observe for normal saline leakage or SQ tissue swelling.
 - a. If neither occurs, proceed.
 - b. If occurs, select a different site.
- 9. Connect the appropriate IV equipment (normal saline locks not indicated in IO placement).
-  10. In conscious patients, prior to initiating infusion, may administer **lidocaine 2%**
 - a. Adult 20 mg IO
 -  b. Pediatrics 0.5 mg/kg, IO maximum dose of 20 mg.
- 11. Administer the appropriate fluids and/or drugs.
- 12. Stabilize the entire intraosseous set-up as if securing an impaled object.
-  13. Conscious patients experiencing pain with infusion may require an additional dose of **lidocaine 2%**.
-  14. If the IO is unsuccessful after 2 attempts, contact Medical Control

Procedure for Discontinuation/Nonfunctioning IVs:

- 1. Patients who have refused transport that have received an IV must have the IV removed and it must be documented in the patient care record.
- 2. Nonfunctioning IVs will be handled in one of the following ways:
 - a. Removed prior to transfer of care - placement and removal of the nonfunctioning IV will be included in both verbal and written reports.
 - b. Not removed prior to transfer of care – the nonfunctioning IV will be clearly marked as nonfunctioning and it will be included in both verbal and written reports.

Medication Protocols

Lidocaine

Reference(s):

Vallée [et.al.](#) Compatibility of Lactated Ringer's Injection With 94 Selected Intravenous Drugs During Simulated Y-site Administration. Hospital Pharmacy 2021, Vol. 56(4) 228–234.

**Tri-County Emergency Medical Control Authority
Procedures
VASCULAR ACCESS & IV FLUID THERAPY ADDENDUM**



Initial Date: 9/5/2025

Revised Date:

Section 7-23a

VASCULAR ACCESS & IV FLUID THERAPY ADDENDUM

Procedure for Intraosseous Placement:

4. Selection of Site:
 - D. Consider IO placement in proximal humerus for traumatic pelvic, abdominal, and chest injuries, below the nipple line, with hemorrhage or suspected hemorrhage. When injuries are located above the nipple line, IO placement should be in the proximal tibia.

**Michigan
PROCEDURES**
**END TIDAL CARBON DIOXIDE MONITORING
(CAPNOMETRY AND CAPNOGRAPHY)**

Initial Date: 05/31/2012
Revised Date: 02/13/23

Section 7-24

End-Tidal Carbon Dioxide Monitoring (Capnometry and Capnography)

Aliases: ETCO2, End Tidal, Capnography

Definitions: For the purpose of all protocols the mention End Tidal Carbon Dioxide monitoring, these are the definitions:

- ① 1. Capnography is a graphic representation of exhaled carbon dioxide displayed as a waveform along with a numeric (quantitative) representation.
- Capnography is mandatory for endotracheal tube airway confirmation.
 - Capnography via nasal cannula is mandatory during certain medication administrations per applicable protocol as it is also a valuable assessment tool in critically ill patients.

MCA approval to utilize capnography.



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

2. Capnometry is a numeric representation of exhaled carbon dioxide.
- A colorimetric (qualitative) end tidal carbon dioxide monitor is a rudimentary form of capnometry and is acceptable for use in MFR and BLS applications.
 - Capnometry that includes a numerical (quantitative) read out is preferred to colorimetric capnometry.

Indications:

- Determining appropriate placement of an airway has taken place.
 - Capnography **must** be utilized to confirm endotracheal tube placement.
 - Capnography or Capnometry **must** be utilized on all supraglottic airways per licensure level requirements.
- Continuous monitoring of the integrity of the ventilatory circuit.
 - Capnography **may** be utilized in patients receiving assisted ventilations without advanced airways (used between the face mask and the bag-valve).
 - Capnography **must** be used for patients on transport ventilators.
- Monitoring severity of pulmonary disease (bronchospasm) and evaluating response to therapy
 - Capnography **may** be utilized in patients with respiratory distress, or with signs and symptoms suggestive of acidosis.
- Monitoring therapy intended to increase coronary blood flow, reflected in CO₂ elimination

**END TIDAL CARBON DIOXIDE MONITORING
(CAPNOMETRY AND CAPNOGRAPHY)**

Initial Date: 05/31/2012

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- A. Capnography **may** be utilized in patients receiving CPR (even without advanced airway placement), cardiac pacing, or when receiving medications that are intended to increase cardiac output, as a means to determine the physiological effectiveness of interventions
- B. Capnography **must** be utilized for critically ill patients and for patients with ROSC in ALS/LALS units.

Contraindications:

1. There are no absolute contraindications to Capnography/Capnometry

Procedure:

1. Attach the colorimetric device to airway device (supraglottic or between facemask and BVM)
2. Note presence or absence of color change.
 - a. If no change in color on device, verify placement of device.
3. Document findings in patient chart.
4. When ALS arrives, switch to capnography (if available) from capnometry.
5. Attach the CO₂ sensor to the monitoring device and to the advanced airway, or between the mask and the bag valve in the ventilated patient that does not have an advanced airway placed or using the nasal cannula style sensor for patients not receiving assisted ventilation.
6. Note the CO₂ level and waveform characteristics
7. Any loss of CO₂ detection or waveform may indicate an airway or ventilation problem and should be investigated, corrected and documented.
8. Document the use and results in the Patient Care Record (PCR).

Note: If a “0” value, no value, or no color change is noted for a patient:

- Ensure that the patient has adequate spontaneous circulation and ventilation, or that effective CPR is being performed
- Verify that the tubing is properly connected to the monitor and that there are no kinks in the tubing.
- If the tubing is found not to be the problem and an advanced airway has been placed, remove the advanced airway immediately and assist ventilations as needed with manual ventilation techniques.

Michigan PROCEDURES MICHIGAN PHYSICIAN ORDERS FOR SCOPE OF TREATMENT (MI-POST)

Initial Date: 04/23/2021
Revised Date: 02/12/2026

Section 7-25

Michigan Physician Orders for Scope of Treatment (MI-POST)

Aliases: POST

Purpose: The purpose of this policy is to provide a guideline to prehospital providers, who under certain circumstances may accommodate patients who do not wish to receive and/or may not benefit from certain interventions. This protocol is drafted in accordance with Public Act 154 of 2017. This protocol is intended to facilitate kind, humane, and compassionate service for patients who have executed a valid MI-POST under the law.

I. Definitions

- A. Attending health professional – means a physician, physician’s assistant, or certified nurse practitioner, who has primary responsibility for the treatment of a patient and is authorized to issue the medical orders on a POST form.
- B. Patient – means an adult with an advanced illness or means an adult with another medical condition that, despite available curative therapies or modulation, compromises his or her health so as to make death within 1 year foreseeable though not a specific or predicted prognosis.
- C. Guardian – means a person with the powers and duties to make medical treatment decisions on behalf of a patient to the extent granted by court order under section 5314 of the Estates and Protected Individuals Code, 1998 PS 386, MCL 700.5314.
- D. Patient Advocate – means an individual designated to make medical treatment decisions for a patient under Section 496 of the revised Probate Code, Act No. 642 of the Public Acts of 1978, being section 700.496 of the Michigan Compiled Laws.

- II. Introduction - EMS providers who encounter an approved MI-POST in the field should be aware of the different levels of care in Sections A and B of the form.

III. Procedure for Use of Form



- A. If there are issues with the form, the orders contained therein, or the circumstances of the situation are unclear, personnel may initiate treatment and contact Medical Control for direction.
- B. Section A – Applies to only individuals who do NOT have a pulse and are not breathing upon arrival of EMS personnel or become pulseless or apneic during treatment.
 - a. If *Attempt Resuscitation* is checked, provide treatment according to appropriate **Cardiac Arrest-Treatment Protocol**.
 - b. If *DO NOT attempt resuscitation* is checked, refer to **Dead on Scene and Termination of Resuscitation-Procedure Protocol** or **Medical Examiner Notification and Body Disposition Protocol** as appropriate.
- C. Section B – For patients who have a pulse and/or are breathing
 - a. Comfort-Focused Treatment box is selected:

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 5/13/2026

MCA Implementation Date: 7-1-2026

MDHHS Approval: 02/27/2026

MDHHS Reviewed 2026

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PROCEDURES
MICHIGAN PHYSICIAN ORDERS
FOR SCOPE OF TREATMENT (MI-POST)

Initial Date: 04/23/2021
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1. Patients should receive full palliative treatment for pain, dyspnea, hemorrhage, or other medical conditions (including medication by any route) according to applicable protocols.
2. Relief of choking caused by a foreign body is appropriate, but if breathing has stopped and the patient is unconscious, ventilation should not be assisted.
3. Follow appropriate transport and destination protocols as needed.
- b. Selective Treatment box is selected:
 1. All patients receive comfort treatment plus:
 2. Treat medical conditions according to protocol including IV therapy, cardiac monitoring, medications, and non-invasive airway support.
 3. Do not use invasive airways (including supraglottic airways).
- c. Full Treatment box is selected:
 1. All patients receive comfort treatment, plus:
 2. Full treatment should be provided. This includes, but is not limited to, intubation, other invasive airways, and mechanical ventilation.
- d. If no box is checked, Full Treatment is implied.

IV. MI POST Form

- A. An example form is contained in this protocol. The original form will generally be pink, but copies of the form are valid (paper or digital).
- B. The form must be dated within the last year. Note: reaffirmation dates should be counted as the most recent date, see Section G.
- C. The form must be signed by the attending health professional and the patient or the patient advocate/durable power of attorney for healthcare. A verbal order notation is valid for 10 calendar days.
- D. All previous versions of the form are valid, if all the above are true and there are no marks indicating a revocation on the form.
- E. The form is voluntary and may be revoked:
 - a. By the patient, at any time when the patient can communicate their wishes.
 - b. By the patient advocate/durable power of attorney for healthcare when it is considered to be consistent with the patient's wishes or in the patient's interest when the patient's wishes are unknown.
 - c. By the attending health professional when there is a condition change that makes the orders contained on the POST contrary to accepted healthcare standards.

Protocol Source/References: MCL 333.20967, MCL 333.5679, MCL 333.56

**Michigan
PROCEDURES**
**MICHIGAN PHYSICIAN ORDERS
FOR SCOPE OF TREATMENT (MI-POST)**

Initial Date: 04/23/2021
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**MDHHS-5836, MICHIGAN PHYSICIAN ORDERS
FOR SCOPE OF TREATMENT (MI-POST)**
Michigan Department of Health and Human Services (MDHHS)
(Revised 8-22)

HIPAA permits disclosure of MI-POST to other Health Care Professionals, as necessary. This MI-POST form is void if Part 1 or Section D are blank. Leaving blank any section of the medical orders (Sections A, B, or C) does not void the form and is interpreted as full treatment for that section.

PART 1 – PATIENT INFORMATION

Patient Last Name	Patient First Name	Patient Middle Initial
Date of Birth (mm/dd/yyyy)	Date Form Prepared (mm/dd/yyyy)	
Diagnosis supporting use of MI-POST		

This form is a Physician Order sheet based on the medical conditions and decisions of the person identified on this form. Paper copies, facsimiles, and digital images are valid and should be followed as if an original copy. This form is for adults with an advanced illness. It is not for healthy adults.

PART 2 – MEDICAL ORDERS

Section A – Cardiopulmonary Resuscitation (CPR)

Person has no pulse and is not breathing. See MDHHS-5837 for further details.

- ☐ Attempt Resuscitation/CPR (Must choose Full Treatment in Section B).
- ☐ DO NOT attempt Resuscitation/CPR (No CPR, allow Natural Death).

Section B – Medical Interventions

Person has pulse and/or is breathing. See MDHHS-5837 for further details on medical interventions.

- ☐ **Comfort-Focused Treatment**
Primary goal of maximizing comfort. May include pain relief through use of medication, positioning, wound care, food and water by mouth, and non-invasive respiratory assistance.
- ☐ **Selective Treatment**
Primary goal of treating medical conditions while avoiding burdensome measures. May include IV fluids, cardiac monitoring including cardioversion, and non-invasive airway support.
- ☐ **Full Treatment**
Primary goal of prolonging life by all medically effective means. May include intubation, advanced invasive airway interventions, mechanical ventilation, other advanced interventions.

Section C – Additional Orders (optional)

Medical orders for whether or when to start, withhold, or stop a specific treatment. Treatments may include but are not limited to dialysis, medically assisted provisions of nutrition, long-term life-support, medications, and blood products.

Send form with Patient whenever transferred or discharged.

MDHHS-5836 (Rev. 8-22) Previous edition obsolete.

1

**Michigan
PROCEDURES**
**MICHIGAN PHYSICIAN ORDERS
FOR SCOPE OF TREATMENT (MI-POST)**

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Section D – Signature of Attending Health Professional

My signature below indicates that these orders are medically appropriate given the patient's current medical condition, reflect to the best of my knowledge the patient's goals for care, and that the patient (or the patient representative) has received the information sheet.

Print Name	Date
Signature	Phone Number
Print Name of Collaborating Physician	Phone Number

Section E – Signature of Patient or Patient Representative

My signature indicates I have discussed, understand, and voluntarily consent to the medical orders on this MI-POST form. I acknowledge that if I am signing as the patient's representative, these decisions are consistent with the patient's wishes to the best of my knowledge.

☐ Patient ☐ Patient Advocate/Durable Power of Attorney for Health Care (DPOAHC)
☐ Court-Appointed Guardian

Print Name of Patient	Print Name of Patient Representative
Signature	Date

Information of Legally Authorized Representative

Complete this section if this MI-POST form was signed by a Patient Advocate/DPOAHC or Court-Appointed Guardian.

Address	City	State	Zip Code
Phone Number	Alternate Phone Number		

Section F – Individual Assisting with Completion of MI-POST Form

Print Preparer's Name	Title	Date
Preparer's Signature	Organization	Phone Number

Section G – To Reaffirm or Revoke this Form

This MI-POST form can be reaffirmed or revoked at any time, verbally or in writing. See MDHHS-5837 for further details on reaffirmation or revocation. If this document is revoked or is not reaffirmed, and a new form is not completed, full treatment and resuscitation will be provided.

Healthcare Provider Name/Collaborative Physician (if applicable)	Healthcare Provider Signature
Patient/Representative Name	Patient/Representative Signature Reaffirmation Date

Send form with Patient whenever transferred or discharged.

HIPAA permits disclosure of MI-POST to other Health Care Professionals, as necessary.

The Michigan Department of Health and Human Services will not exclude from participation in, deny benefits of, or discriminate against any individual or group because of race, sex, religion, age, national origin, color, height, weight, marital status, partisan considerations, or a disability or genetic information that is unrelated to the person's eligibility.

Initial Date: 02/24/2023

Revised Date: 03/03/2025

Section 7-26



Interfacility High Flow Nasal Oxygen (MCA Optional Protocol)

This protocol is for paramedic use only

Purpose: To outline the process for paramedics who have received MCA approved training, to transport a patient on a high flow nasal cannula during an interfacility transport.

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

In conjunction the MCA must also select the option for Interfacility High Flow Nasal Oxygen on the **Interfacility Facility Patient Transfers Protocol**.

- I. Indications
 - A. Order from sending facility/physician
 - B. Hypoxic respiratory failure, hypoxic respiratory distress, respiratory distress
 - C. Availability of an MCA approved high flow nasal cannula device and necessary supplies required to facilitate transport of patient.
 - D. Adults (> 14 years of age)
 - E. Pediatrics ($\leq$ 14 years of age) per MCA selection for allowance and/or staff requirements.

MCA approval for pediatric HFNO ($\leq$ 14 years of age) WITHOUT accompanying hospital staff

- ☐ NO – Staff must accompany patient
- ☐ YES - Enhanced Paramedic or Critical Care Paramedic only
- ☒ YES – Paramedic who has received additional MCA approved training.

- II. Contraindications
 - A. Inability to provide continuous, humidification using an approved delivery device
 - B. Inability to provide therapy through appropriately sized nasal prongs
 - C. Insufficient supply of oxygen to complete the transport
- III. Procedure
 - A. Ensure that an adequate supply of oxygen is available for the transport.
 - i. Calculate the amount of oxygen needed prior to departure.
 - ii. Ensure that you have at least two times the amount of oxygen anticipated.

**INTERFACILITY HIGH FLOW NASAL OXYGEN (HNFO)
(MCA Optional Protocol)**

Initial Date: 02/24/2023

Revised Date: 03/03/2025

Section 7-26

- B. Perform appropriate patient assessment, including obtaining vital signs, pulse oximeter reading, cardiac rhythm, and current device settings
- C. Set FiO₂ to maintain SpO₂ at or above 94% or to patient's targeted baseline oxygen saturation as directed by the sending physician. Utilize facility settings as starting point, if available.
- D. Set flow rate in liters per minute (L/min) to decrease work of breathing.
 - i. Utilize facility settings as starting point, if available.
 - ii. Flow calculation: 2 L/kg/min up to the first 12 kg, plus 0.5 L/kg/min for each kg thereafter, up to a maximum flow rate of 60 L/min.
- E. Reassess vitals, work of breathing, mental status, and breath sounds.
Reassessment should be continuous, but documentation of vitals must occur at least every five minutes throughout patient contact.
- F. Consider the need for escalation of respiratory support if patient remains in respiratory failure on more than 2 L/kg/min of flow or maximum settings for the delivery device.
- G. If patient deterioration occurs, terminate HFNO and begin positive pressure respiratory support via CPAP, BIPAP, BVM, or intubation, if necessary.

NOTES:

- A. For suspected or confirmed COVID-19 patients, personnel must don respirators, eye protection, gowns, and gloves for transport.
- B. Patients with congenital heart conditions may have baseline saturations considerably lower than 90% and driving saturations higher than the target can be harmful for these patients.

TRANSPORT OF ADULT VENTILATOR-DEPENDENT PATIENT

Initial Date:

Revised Date: 06/27/2023

Section 7-27

Transport of Adult Ventilator-Dependent Patient

The purpose of this protocol is to establish a uniform procedure for using mechanical ventilation for the transport of patients who are otherwise stable and do not meet criteria for MICU or Air Medical transport.

Criteria

- A. BLS may transport patients on their own ventilator if:
 - a. Patient caregiver trained on the ventilator accompanies patient
 - b. Waveform capnography if available per MCA selection in **End-Tidal Carbon Dioxide Monitoring-Procedure Protocol**
 - i. If waveform capnography not available, capnometry that includes a numerical (quantitative) read out is required.
 - c. One of the following conditions:
 - i. Scheduled transport (interfacility, facility to home, home to appointment, etc.) OR
 - ii. Low acuity 9-1-1 that requires BLS level care.
- B. ALS (non-Critical Care, non-Enhanced Paramedic) in which all agency paramedic personnel are trained on and carry ventilators.

Procedure

- A. Always keep a bag valve mask resuscitator close by in case of ventilator failure.
-  B. Patients who are ventilator dependent may be transported on their own ventilator (home ventilator) if desired. Assure the BVM is available for back up use if transporting with a home ventilator. Patient caregiver trained in the use of ventilator should attend during transport if possible.
 - 1. Verify tube placement with waveform capnography.
 - 2. Patient lung sounds should be checked and documented. Tube placement must be rechecked via lung sounds and continuous waveform capnography every time the patient is moved, i.e., stretcher to stretcher or in or out of a vehicle. Continuous monitoring with the pulse oximeter will be used on all patients.
-  C. Patients on agency supplied ventilator:
 - 1. Newly vented - Ventilatory status should be established via Venous Blood Gas (VBG) in the newly intubated patient and documented when available. Continuous monitoring with the pulse oximeter and capnography will be used on all patients. If pulse oximetry is not attainable due to poor circulation, an ABG may be used to ensure adequate oxygenation. If unavailable, consider MICU or air medical transport.
 - 2. Ventilator and circuit must be set up according to manufacturer's recommendations.
 - 3. Patient should be placed on the ventilator approximately 5 minutes prior to departure to ensure the patient tolerates the ventilator. Appropriate adjustments should be made prior to departure.
 - 4. Assist Control (AC) and Synchronized Intermittent Mandatory Ventilations (SIMV) are acceptable modes of operation. Set Positive End Expiratory Pressure (PEEP)

**Michigan
PROCEDURE**

TRANSPORT OF ADULT VENTILATOR-DEPENDENT PATIENT

Initial Date:

Revised Date: 06/27/2023

Section 7-27

and Sigh as established by sending facility. PEEP greater than 5 cmH₂O should be referred to MICU or Air Medical Services for transport or appropriate hospital staff must accompany the patient.

- a. Verify tube placement with waveform capnography prior to placing the patient on the transport ventilator.
- b. Patient lung sounds should be checked and documented. Tube placement must be rechecked via lung sounds and continuous waveform capnography every time the patient is moved, i.e., stretcher to stretcher or in or out of a vehicle. Continuous monitoring with the pulse oximeter will be used on all patients.

**Michigan
PROCEDURE**
**LEFT VENTRICULAR ASSIST DEVICE
(LVAD)**

Initial Date:
Revised Date: 01/27/2023

Section 7-28

Left Ventricular Assist Device

A Left Ventricular Assist Device (LVAD) is an implanted device that pumps blood from the left ventricle into the aorta to support circulation. For some of these patients this device is a bridge to transplant but for others it is a life prolonging therapy if transplant is not an option. Care of patients supported by these devices can present a challenge for care givers in the pre-hospital environment. This document provides guidance for the provision of emergency care for patients in the pre-hospital environment who have an LVAD in place.

Immediately contact the VAD coordinator/center for the device the patient has for guidance.

Contact Information:

Program Name:

Phone: _____ Request VAD Coordinator and state patient's name

VAD Pager number:

Contact Information:

Program Name:

Phone: _____ Request VAD Coordinator and state patient's name

VAD Pager number:

1. LVAD's create non-pulsatile flow; it may be difficult to obtain vital signs using standard equipment and or methods. Utilize skin color, mental status and capillary refill to assess the patient.
2. The device supports left ventricular function and is dependent on some right heart function and adequate circulating volume. Even minor volume depletion may cause diminished perfusion and require fluid administration.
3. All LVAD patients are anticoagulated.
4. LVAD's are powered electrically, a driveline exits the body, connects to a "controller" which in turn is connected to a power source. Proper functioning of the device is dependent on the integrity of these connections. Exercise caution related to the drive line, which exits through the skin in the upper abdomen. Do not cut, pull or damage it in any way. It will be secured by some type of binder or other device to protect it.
5. Connections should not be forced together or apart. All connections are secured by a locking device.
6. Generally, patients, their families and caregivers are familiar with the operation of the device and should accompany the patient as a resource for operation of the device if promptly available.
7. All LVAD patients are assigned a hospital-based coordinator who is available by phone and should be contacted urgently.

**Michigan
PROCEDURE**
**LEFT VENTRICULAR ASSIST DEVICE
(LVAD)**

Initial Date:

Revised Date: 01/27/2023

Section 7-28

8. All LVAD patients should have a “go bag” close by which contains an additional power supply as well as an extra controller. This should be brought with the patient to the hospital. This should contain charged batteries, a back-up controller and a power-based unit.
9. If possible, the patient should be transported with four fully charged batteries. Two will be connected to the patient and the other will serve as backups.
10. Most issues will be the result of medical problems rather than device failure.

Procedure

Do NOT use the following devices on an LVAD patient

- AED
- Mechanical Compression Device

1. Assess the patient for signs of life and function of the device
 - A. Awake and or alert
 - B. Satisfactory capillary refill
 - C. Audible whine/hum in the region around the heart and or left upper abdomen
 - D. Check all connections, tighten as indicated to be sure they are secure
 - E. Identify any alarms that are heard or visible on controller and relay information to VAD coordinator.
 - F. If able, begin to assemble components or have the patient’s designated LVAD companion gather components that will accompany patient
 - a. Extra controller
 - b. Extra batteries
 - c. Power unit (charger) and or A/C adapter
2. Assess for other medical issues
 -  A. Start an IV and a fluid bolus if volume depletion is felt to be present
 - B. Control bleeding
 -  C. Attach monitor and assess rhythm
 - a. LVAD patients may have life threatening arrhythmias at baseline including VF or VT. Ask the patient, companion, or LVAD coordinator what the patient’s baseline rhythm is.
 - b. If the patient is unstable and they are in an arrhythmia that is not their baseline treat the arrhythmia
 - c. Defibrillation, cardioversion, and external pacing are allowed if indicated. You do not need to disconnect the device.
 - D. Follow appropriate medical protocol
 - E. CPR compressions should only be performed as a last resort.
 -  a. Consult with Medical Control immediately if the device is non-functioning and you are starting CPR.
 - F. Prepare for transport to MCA approved LVAD hospital

Michigan
PROCEDURE
LEFT VENTRICULAR ASSIST DEVICE
(LVAD)

Initial Date:

Revised Date: 01/27/2023

Section 7-28

-
3. Consult with LVAD coordinator
 - A. Patient or companion should have emergency contact information
 - B. Report information from the controller including any alarms
 - C. Change battery or power source as requested
 - D. Change controller as requested-be sure patient is laying or sitting down as pump will stop briefly
 4. Transport to an MCA approved LVAD Center
 - A.
 - B.
 - C.

**Michigan
PROCEDURES**
MECHANICAL CHEST COMPRESSION DEVICE
(MCA Optional Protocol)

Initial Date: 02/24/2023
Revised Date: 05/26/2023

Section 7-29

Mechanical Chest Compression Device (MCA Optional Protocol)

Manual chest compressions remain the standard of care for the treatment of cardiac arrest. Mechanical chest compression devices may only be used as alternative to conventional CPR in specific settings where the delivery of high-quality manual compressions may be challenging or dangerous for the provider (e.g., limited rescuers available, CPR during hypothermic cardiac arrest, CPR in a moving ambulance).

☐ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

MCAs will be responsible for maintaining a roster of the agencies choosing to participate and will submit roster (including brand name/model number of device) to MDHHS.

Requirements:

1. FDA approved MCA authorized mechanical chest compression devices as listed below (brand name and model if applicable)

☒ Physio-Control/Stryker LUCAS Device

☐☐☒☒

2. Providers utilizing the device are trained on use of the device per MCA requirements
3. Follow manufacturer's instructions for use unless otherwise directed by the MCA.

Indications:

1. Cardiac Arrest

Contraindications:

1. Return of Spontaneous Circulation
2. Age and weight restrictions per manufacturers recommendations.
3. Patients with LVAD

Michigan
PROCEDURES
MECHANICAL CHEST COMPRESSION DEVICE
(MCA Optional Protocol)

Initial Date: 02/24/2023

Revised Date: 05/26/2023

Section 7-29

Procedure:

1. Perform high-quality CPR while the device is being prepared for use.
2. Utilize device according to manufacturer's recommendations.
3. Refer to **Adult or Pediatric General Cardiac Arrest -Treatment Protocol**
4. Document use of Mechanical Chest Compression Device in patient care record including but not limited to:
 - A. Type/brand of device
 - B. Applicable times Mechanical Chest Compression Device was in use.
 - C. Rate at which the device is set/delivering mechanical chest compressions.

Initial Date: 9/2004
Revised Date: 12/27/2022

Section: 8-1

Downgrade of Response

Purpose: To allow downgrading of EMS vehicles responding to an EMS incident.

- I. If information is received, while en route, that the incident is not life-threatening, then that ambulance may use that information to alter response accordingly.
- II. No EMS vehicle shall be canceled, once a request for emergency assistance is received, unless one of the following occurs.
 - A. A police/fire department unit reports that no person/accident can be found at the location,
 - B. Any licensed EMS personnel on the scene cancels the responding EMS vehicles.
 - C. A 1st party caller (the potential patient) states they no longer require a response from emergency medical services AND an EMS response is no longer requested AND there is not another indication that an emergency exists.

MCL 333.20967 If an emergency has been declared, the declaration that an emergency no longer exists shall be made only by a licensed EMS provider or a licensed health professional who has training specific to the provision of emergency medical services in accordance with protocols established by the local medical control authority.

Note: For the purposes of this protocol, a situation in which injuries or illness have not been confirmed does not constitute an “emergency” (i.e. motor vehicle crash with unknown injuries, unknown medical alarm).

**Michigan
SYSTEM
PATIENT PRIORITIZATION AND
USE OF LIGHTS AND SIRENS**

Initial Date: 12/27/2022
Revised Date: 03/31/2025

Section: 8-2

Patient Prioritization and Use of Lights and Siren

This protocol is designed to provide a safe and orderly response to all requests for emergency medical care in the State of Michigan.

- A. **Michigan Motor Vehicle Code** (§257.603 and 257.653)
The Michigan Motor Vehicle Code governs the driving of emergency vehicles. All licensed life support vehicles will abide by the Michigan Motor Vehicle Code.
 - 1. This protocol does not supersede the Michigan Motor Vehicle Code.
- B. **Authority to Require Lights and Siren Use**
Neither the patient's sending nor receiving physician has the authority to require the use of lights and siren during transport; this policy shall be followed at all times. Only the EMS transport crew can determine transport mode, based on patient priority.
- C. **Use of Emergency Medical Dispatch**
Where Emergency Medical Dispatchers (EMD) and/or a tiered EMS response are/is available, the EMS Agency is encouraged to develop procedures that reduce unnecessary use of lights and sirens. The procedures may include, but are not limited to, the use of established EMD call screening protocols and evaluation of the scene/patient by first responder personnel.
- D. **Prudent Use of Lights and Siren During Transport**
Lights and sirens may be used to clear traffic and then shut down, if prudent, where no obstruction or delay is present, provided both lights and siren are activated at least 500 feet before any intersection or obstruction to be cleared. When lights and siren are not in use, the vehicle must be operated as a typical non-emergency vehicle, per the Motor Vehicle Code.
- E. **Returning from the transport, returning to a service area**
 - 1. EMS units may **ONLY** utilize lights and sirens to return to their area **IF THEY ARE RESPONDING TO AN EMERGENCY CALL**.
 - 2. Lights and sirens will **NOT** be used to return to an area when the unit is not responding to another emergency call.
- F. **Education**
Life Support Agencies shall ensure MCA approved annual training surrounding the Michigan Motor Vehicle Code, safe use of lights and siren, this protocol and related agency policies.
- G. **Agency and Medical Control Authority Specific Policies**
This protocol does not preclude MCAs from developing protocols and/or individual agencies from developing internal policies on this subject, as long as it includes the contents of this protocol as a minimum.

**Michigan
SYSTEM
PATIENT PRIORITIZATION AND
USE OF LIGHTS AND SIRENS**

Initial Date: 12/27/2022
Revised Date: 03/31/2025

Section: 8-2

H. Response and Transport

Response to the scene and transport to the hospital is determined by patient priority.

1. If the on-scene patient priority is different from the dispatch priority, follow the on-scene patient priority for transport.
2. If the patient priority changes during transport follow the appropriate use of lights and sirens for the new patient priority.

I. Unstable Patients

Priority	Description	Example(s) include, but not limited to
Unstable	Unstable patients with a critical and immediate life-threatening illness or injury, or require time sensitive interventions	A patient that has an acutely life-threatening illness or injury and is unstable. • Unstable or deteriorating vital signs • Compromised airway that cannot be secured by EMS. • Severe respiratory distress/failure • Cardiac arrest or post cardiac arrest • STEMI • Tonic Clonic seizures unresponsive to treatment • Significant blunt or penetrating trauma including but not limited to: ○ Airway compromised ○ Respiratory distress ○ Signs of inadequate perfusion

1. Response to the scene for unstable patient

**MCA Selection for Response to Unstable Patient Incidents
(select only one)**

- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and sirens while responding to the scene
- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and siren only when necessary to circumvent significant traffic delays and obstructions responding to the scene

**Michigan
SYSTEM
PATIENT PRIORITIZATION AND
USE OF LIGHTS AND SIRENS**

Initial Date: 12/27/2022
Revised Date: 03/31/2025

Section: 8-2

2. Transport to the hospital for unstable patient

**MCA Selection for Transport of Unstable Patients
(select only one)**

- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and sirens while transporting to the hospital
- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and siren only when necessary to circumvent significant traffic delays and obstructions when transporting to the hospital

J. Potentially Unstable Patients

Priority	Description	Example(s) include, but not limited to
Potentially Unstable	Potentially unstable patients that are ill or injured <u>without immediate</u> life-threatening condition and do not require time sensitive interventions	A patient that is currently stable but is felt to have a condition that may become unstable or life-threatening if not evaluated and treated rapidly. • Hemodynamically stable chest pain without signs of STEMI • Altered mental status – not acutely deteriorating • Seizure - Post-ictal not actively seizing • Hemodynamically stable abdominal pain • Hemodynamically stable >65 y/o fall with confirmed or suspicion of head injury and currently taking blood thinner medications

**Michigan
SYSTEM
PATIENT PRIORITIZATION AND
USE OF LIGHTS AND SIRENS**

Initial Date: 12/27/2022
Revised Date: 03/31/2025

Section: 8-2

1. Response to the scene for potentially unstable patient

**MCA Selection for Response to Potentially Unstable Patients
(select only one)**

- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and sirens while responding to the scene, transports without lights and siren.
- ☐ Emergency Vehicles, in compliance with Michigan Vehicle Code, respond with no lights and sirens to the scene or during transport (including first responding life support vehicles).
- ☒ Only the first responding life support vehicle, in compliance with Michigan Motor Vehicle Code, responds lights and sirens to the scene. All other life support vehicles respond with no lights and sirens to the scene unless upgraded.
- ☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and siren only when necessary to circumvent significant traffic delays and obstructions when transporting to the hospital

2. Transport to hospital for potentially unstable patient - Do not transport using lights and sirens unless the patient's condition deteriorates.

K. Stable Patients

Priority	Description	Example(s) include, but not limited to
Stable	Stable patients are ill or injured patients not fitting the above two categories who require medical attention but do not have a life-threatening condition.	A patient that does need to receive medical evaluation but does NOT have a potentially life-threatening illness or injury at the time of assessment or transport by EMS.

1. Respond to the incident and transport to the hospital using normal traffic patterns.

**Michigan
SYSTEM
PATIENT PRIORITIZATION AND
USE OF LIGHTS AND SIRENS**

Initial Date: 12/27/2022

Revised Date: 03/31/2025

Section: 8-2

L. Dead Patients

Priority	Description	
<i>Dead</i>	Dead patients are absent of all vital signs and do not require further medical attention, per protocol.	See Dead on Scene/Termination of Resuscitation Protocol and Medical Examiner Notification and Body Disposition Protocol

1. Do not transport using lights and sirens.

Initial Date: 9/2004

Revised Date: 01/27/2023

Section: 8-3

Transport Destination and Diversion

Purpose: To define the decision-making process regarding EMS destination.

I. Transport Destination Decisions

- A. In matters of imminent threat to life or limb, transport to the closest appropriate facility.

Closest appropriate is a facility capable of providing definitive care or, if definitive care is not readily available, resuscitative care for the patient's condition in consultation with on-line medical control or as defined by MCA specific protocol.

- B. Patients that are stable will be transported according to the following ranking given below unless the patient becomes unstable during transport:

1. Patient request
2. Family request
3. Patient's personal physician request

- C. No other individuals are permitted to determine destination of patient without prior approval of on-line medical control: (police, fire, bystander physician, etc.)



- D. Exception: If transportation to the requested facility removes the EMS vehicle from the service area for an extended time, Consult medical control and an alternative may be considered

II. Transportation Procedure

- A. Priority 3 patients (medical or trauma): Shall be transported to an Emergency Facility of the patient's or patient's family choice

- B. Priority 1 and 2 (medical) Patients: shall be transported to the closest appropriate facility, based on the following guidelines:

- C. ST Elevation Myocardial Infarction (STEMI)

1. Transport to a facility capable of interventional cardiac care.

- D. Return of Spontaneous Circulation (ROSC)

1. Transport to a facility capable of interventional cardiac care. Notify receiving facility, as soon as possible and give ETA.

- E. Stroke



1. Notify closest MCA approved stroke center as soon as possible if Cincinnati Stroke Scale or other validated MCA approved stroke scale is abnormal with "Stroke Alert" and ETA

- F. Trauma Patients – follow **Adult and Pediatric Trauma Triage-Treatment Protocol**

1. A patient may be transported to a Provider Based Emergency department if they are:

- i. Priority 3 patient who requests transport to the Provider Based Emergency department.
- ii. A stable patient (priority 2) who has been approved by medical direction for transport to a Provider Based Emergency department.

Initial Date: 9/2004

Revised Date: 01/27/2023

Section: 8-3

- iii. An unstable Priority 1 patient who is unstable for transport to an acute care facility where the Provider Based Emergency department can provide additional care not available in the ambulance (the primary example is a patient being transported by an ALS unit with an airway that cannot be secured or maintained by EMS personnel).
 - iv. A trauma patient with minor injuries such as sprains and minor fractures without deformity or without high velocity mechanism who requests transport to the Provider Based Emergency Department.
- G. Documentation of destination will be the reason the facility was chosen (specialty care, trauma center). Closest facility will only be indicated when the facility is geographically the closest facility.

III. Patient Diversions

- A. Once the decision is made to transport a patient to a facility, the patient may be diverted to another facility if:
 - 1. On-line medical control for the initially selected destination requests diversion to another facility. A receiving facility may not refuse a patient unless it does not have the staff or resources to accept the patient.
 - 2. The patient experiences an imminent threat to life or clinical deterioration and, in the medical judgment of the EMS personnel, the patient should be diverted to the closest appropriate facility.
 - i. Documentation of the reason for the diversion shall be included in the EMS patient care record.
- B. Immediate on-line medical direction shall be established with the newly chosen receiving facility.
- C. If EMS personnel determine diversion is necessary, contact the initial receiving facility as quickly as possible to inform it of the diversion.,.
- D. Patients requesting transport to a facility, which is currently on diversion, should be advised of the diversion and that the appropriate resources to care for them are not currently available at that institution. An alternative facility destination should be requested from the patient.
 -  1. If the patient persists in the request of the facility currently on diversion, contact medical control.

Note: Each facility has the authority to develop and administer written policies concerning the temporary closing of emergency departments, however a facility on diversion must notify the MCA of the diversion status. By statute, the medical control authority, based on needs of the EMS system, may determine the destination of the patient thus overriding the diversion status.

**Michigan
SYSTEM**
**OB HIGH-RISK DELIVERY TRANSPORT
GUIDELINES**
(MCA Optional Protocol)

Initial Date: 9/2014

Revised Date: 12/27/2022

Section: 8-4

OB High-Risk Delivery Transport Guidelines (MCA Optional Protocol)

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Purpose:

This policy is to establish guidelines for transport of women with pregnancy of more than 20 weeks and less than 34 weeks gestation in active labor, as these infants may require newborn intensive care.

1. In all cases where delivery is imminent, transport will be to the closest emergency receiving facility.
2. If labor is brought on by medical illness or injury of the mother, appropriate medical treatment of the mother is the first priority. This is also the most appropriate treatment of the newborn.
3. If time allows, any woman in active labor with a gestational period of more than 20 weeks and less than 34 weeks, in anticipation of delivery of a high risk newborn, should be taken to (list facilities and instructions for where to proceed with the patient):

X Sparrow Hospital - Main Campus

NOTE: This protocol was created as a template to be used for each MCA to determine the most appropriate transport decisions for the high-risk OB patient in their individualized MCA areas.

**Michigan
SYSTEM**
**ALS and LALS INTERCEPT/TRANSFER
OF CARE**
(MCA Optional Protocol)

Initial Date: 9/2004

Revised Date: 06/05/2023

Section: 8-5

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

ALS and LALS Intercept/Transfer of Care

Purpose: The purpose of this protocol is to establish indications and procedures for ALS intercept for patients being managed by a BLS or LALS unit who might benefit from ALS care or LALS intercept for patients being managed by a BLS unit when ALS is not available.

- I. If a transport has begun by a Basic Life Support (BLS) unit, a rendezvous with an Advanced Life Support (ALS) unit or Limited Advanced Life Support (LALS) if available and ALS unit is not available, should be attempted at a mutually agreed upon location, if indicated and available.
- II. If a transport has begun by a Limited Advanced Life Support (LALS) unit, a rendezvous with an Advanced Life Support (ALS) unit should be attempted at a mutually agreed upon location, if indicated and available.
- III. Indications
 - a. Patients presenting with conditions for which ALS interventions would be potentially beneficial for patients, if the intercept can be completed 10 or more minutes from the receiving facility, including, but not limited to patients with:
 - i. Chest pain with suspected cardiac etiology
 - ii. Seizure
 - iii. Uncontrolled pain
 - iv. Hypoglycemia
 - v. Altered mental status
 - vi. Worsening respiratory distress
 - vii. Major trauma
 - b. Patients presenting with conditions where ALS may be needed for life saving interventions may be intercepted at any distance from the hospital:
 - i. Those with an uncontrolled airway
 - ii. Patients in cardiac arrest without a mechanical CPR device in place
- III. Contraindications
 - a. Low acuity patients for which advanced intervention would likely not be beneficial to the patient.
 - b. Patients with time sensitive emergencies where advanced intervention would likely not be beneficial to the patient

 **NOTE:** BLS unit may contact Medical Control for assistance with any situation as necessary.

**ALS and LALS INTERCEPT/TRANSFER
OF CARE
(MCA Optional Protocol)**

Initial Date: 9/2004

Revised Date: 06/05/2023

Section: 8-5

Procedure & Documentation

1. BLS/LALS personnel are required to provide the receiving ALS (or if applicable LALS) personnel with a complete hand-off report including medical history, pertinent physical exam findings, vital signs, treatment provided and response to treatment.
 - a. The hand-off procedure (i.e., verbal report, field notes, air drop, etc.) must be MCA approved.
2. ALS (or if applicable LALS) personnel will include the complete hand-off report from BLS/LALS within or attached to (i.e., scannable field note) the ALS (or if applicable LALS) patient care record.
3. Both the initial unit (BLS/LALS) and unit receiving the rendezvous (ALS or if applicable LALS) shall complete an electronic Patient Care Report (PCR) and include the following in addition to patient care information:
 - a. Agency name/unit number/providers names from whom patient was received or transferred to.
 - b. If both transferring and receiving units are from the same agency, all personnel should be listed as crew in both the ALS and BLS run when possible.

Initial Date: 08/18/2017
Revised Date: 03/24/2023

Section 8-6

Dispatch

Purpose:

As mandated under Public Act 368 of 1978, as amended, Section 20919 (1)(b): "A local medical control authority shall establish written protocols for the practice of life support agencies and licensed emergency medical services personnel within its region. The protocols shall be developed and adopted in accordance with procedures established by the department and shall include medical protocols to ensure the appropriate dispatching of a life support agency based upon medical need and the capability of the emergency medical services system."

Local municipalities shall determine, in accordance with the rules and regulations of their local Medical Control Authority, the level of agency licensure, as well as who will provide EMS service in their area.

Protocol

1. Public Safety Answering Points and/or Life Support Agency dispatch centers shall use Enhanced 911 technology, where available, and shall dispatch appropriate resources as quickly as possible.
2. Since ALS may provide additional medical care and delay may negatively impact patient outcome, in areas where ALS is available it shall be simultaneously dispatched to certain medical emergencies including, but not limited to:
 - a. Cardiac Arrest
 - b. Chest Pain
 - c. Stroke
 - d. Drug Overdose / Poison
 - e. Altered Mental Status / Unconscious
 - f. Allergic Reaction
 - g. Difficulty Breathing
 - h. Drowning or Near Drowning
 - i. Injury with Bleeding or Immobility
 - j. Seizures / Convulsions
 - k. Diabetic Reactions
 - l. Child Birth
 - m. Burns
 - n. or as determined through prioritized dispatch developed through an MCA approved EMD program.

All medical callers shall be evaluated based on symptoms provided and/or observed, and provided with pre-arrival instructions where applicable as determined through an Emergency Medical Dispatch program. Evaluation, instructions and prioritization shall be made through an Emergency Medical Dispatch program approved by the MCA which conforms to nationally recognized guidelines.

**Tri-County Emergency Medical Control Authority
Systems Protocol
DISPATCH**

Date: March 1, 2013

Page 1 of 2

PURPOSE

To define medically appropriate EMS dispatch methods.

PROCEDURE

- 1.0 Definitions
 - 1.1 Life threatening emergencies – Priority One and some Priority Two patients (per section 6-22) whose condition could reasonably be expected to worsen without immediate intervention.
 - 1.2 Nearest available agency – EMS agency(ies) designated by the municipality to provide emergency medical services, or that EMS agency's designated mutual aid provider.
- 2.0 TCEMCA strongly encourages the use of a medically supervised, protocol driven EMS dispatch system that provides both pre-arrival instructions to callers and response priority data to responding units.
 - 2.1 If response priority data is available from an EMS dispatch point, responding units shall conform their response mode to the data provided.
 - 2.2 A request for EMS service shall not be "stacked" awaiting an available unit if that request is for a "life threatening emergency" as defined in §1.1 above. If a unit is not available within 90 seconds of receipt of the call, the call shall be referred to a mutual aid provider for response. If a unit from the initial provider becomes available after mutual aid has been requested, the initial provider should contact the mutual aid provider to coordinate response and determine the actual closest unit to the call.
 - 2.3 If an EMS agency, or its dispatch service, receives a request to provide service to an area outside its licensed geographic service area for a "life threatening emergency", that EMS agency or its dispatch service shall notify the "nearest available agency" as defined in §1.2 above. Contractual agreements entered into by the EMS agency with other persons shall not contradict or circumvent this requirement.

MCA Name: Tri County Emergency MCA
MCA Approval Date: November 10, 2010
MDCH Approval Date: April 19, 2013
Implementation Date: June 1, 2013

Section 8-6a

**Tri-County Emergency Medical Control Authority
Systems Protocol
DISPATCH**

Date: March 1, 2013

Page 2 of 2

- 2.4 The use of the “nearest available agency” is not required for “emergency” calls not meeting the definition of “life threatening” in §1.1, or for scheduled ambulance transfers.
- 3.0 No EMS unit shall be canceled, once a request for emergency assistance is received, unless one of the following occurs:
 - 3.1 A police/fire department unit reports that no person/accident can be found at the location, or
 - 3.2 Any TCEMCA authorized EMS unit on the scene cancels the responding EMS units. Canceling agency must complete and submit TCEMCA patient refusal forms.
- 4.0 Each EMS agency shall have written Standard Operating Procedures for their dispatch center to use when mutual aid requests are necessary.
- 5.0 It is the responsibility of each EMS agency director/chief to ensure compliance with this protocol.
- 6.0 All TCEMCA authorized agencies shall respond or ensure that a response is provided to all requests for emergency assistance originating from within the bounds of its service area and provide appropriate emergency medical services and/or transportation as necessary without regard to the patient’s ability to pay for said emergency medical services and/or transportation or said patient’s reimbursement status.

Initial Date:

Revised Date: 02/24/2023

Section 8-7

ALS to BLS Transfer of Care (MCA Optional Protocol)

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Purpose

Patients who need or desire transport to a hospital and do NOT meet criteria for ALS interventions, may have care transferred from an ALS unit to a BLS unit if all criteria are met.

1. Criteria for transfer of care from ALS to BLS must include:

- a. Patient assessed by on scene paramedic and deemed appropriate for BLS care.
- b. Patient's airway is patent, maintained without assistance or adjuncts.
- c. Patient is hemodynamically stable with medical complaints or injuries that would be cared for at the BLS level.
- d. No imminent changes are anticipated in the patient's present condition.
- e. Patient presents at baseline mentation and GCS or if unknown, GCS $\geq$ 14.
- f. The EMT in attendance must be willing to accept the transfer of care given the patient's condition.
- g. ALS may consider transfer to BLS for the patients who have meet the above criteria and have had the following ALS interventions:
 - i. IV placement with saline lock
 - ii. Dextrose administration with return to baseline mental status
 - iii. Naloxone administration with return to baseline mental status and without respiratory complaints
 - iv. Analgesia administration, with no other excluding criteria and not requiring additional doses during transport.



- h. For any other patients with ALS interventions performed, contact medical control prior to ALS to BLS transfer of care.

2. Transport by the ALS unit shall be considered if the transfer of care to the BLS staffed ambulance would incur a time delay greater than the projected transport time to the intended receiving facility.

Procedure & Documentation

1. ALS personnel are required to provide BLS personnel with a complete hand-off report including medical history, pertinent physical exam findings, vital signs, treatment provided and response to treatment.
 - a. The hand-off procedure (i.e., verbal report, field notes, air drop, etc.) must be MCA approved.

Initial Date:

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2. BLS personnel will include the complete hand-off report from ALS within or attached to (i.e., scannable field note) the BLS patient care record.
3. Both ALS and BLS shall complete an electronic Patient Care Report (PCR) and include the following in addition to patient care information:
 - a. Agency name/unit number/providers names from whom patient was received or transferred to.
 - b. If both transferring and receiving units are from the same agency, all personnel should be listed as crew in both the ALS and BLS run when possible.

Quality Improvement/Quality Assurance (QA/QI)

1. The MCA shall establish a QA/QI process for review of ALS to BLS transfers of care.

Initial Date: 9/2004

Revised Date: 01/05/2023

Section: 8-9

Helicopter Utilization

I. Indications for Use – in the presence of one or any combination of the following:

NOTE: These guidelines are offered as examples of patients who might benefit from helicopter transport. Additional considerations would include the physical exam, additional contributing factors such as age, mechanism of injury, the level of care available in the area, and ground service availability.

A. Trauma Patients that meet the red criteria per **Adult/Pediatric Trauma Triage-Treatment Protocol and one or more of the following:**

1. Long transport times
2. Poor road conditions
3. Entrapment with prolonged extrication

B. Medical Patients

1. If in the estimation of the paramedic, that the use of helicopter resources would be beneficial to patient outcome.

NOTE: Appropriate helicopter utilization is determined by a combination of factors with the goal of responsible resource utilization for the seriously ill or injured to reach definitive care in the least amount of time.

II. Procedure

A. Request for helicopter service response may require prior medical control approval per MCA selection:



- ☐ **YES** - Online Medical Control pre-approval required

☒ **NO** – Online Medical Control pre-approval not required.
Follow established Medical Control guidelines

B. Patient should be prepared for transport by air in the following manner:

1. Patient should be stabilized and immobilized with ground ambulance equipment per existing protocol.
2. Ground ambulance personnel will stay with the patient until released by the helicopter personnel.

C. Communications

1. Communication with the helicopter dispatch should include information regarding location.
2. Helicopter dispatch will request pertinent medical information to relay to the flight crew.
3. Communications between the helicopter and ground ambulance shall be coordinated through dispatch and preferentially take place on AirLZ1 or AirLZ2 as dictated by local policies and procedures.

D. Landing Site

1. Utilize trained personnel whenever possible.
2. Locate a level, 100' x 100' area clear of obstacles (i.e. wires, trees)

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HELICOPTER UTILIZATION

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-
3. Mark landing zone with a marker at each corner and one upwind.
 4. Public safety vehicles should leave on flashers to assist in identifying site from the air.
 5. Identify obstacles close to the landing zone and communicate all pertinent information about the landing zone to the flight crew.
 6. Landing zone personnel will communicate by radio with the flight crew.
- E. Safety
1. Under NO circumstances should the helicopter be approached from the rear due to the extreme danger of the tail rotor.
 2. The flight crew will direct all actions around a helicopter including personnel approach/departure of the helicopter, and loading/unloading of patients and/or equipment.
 3. Personnel should be in a crouched position in the vicinity of the helicopter and NEVER near the tail rotor.
- F. Patient Destination
1. Patient will be transported to appropriate facility as directed by medical control.
- G. Quality Assurance
1. Upon request, helicopter services will forward copies of their patient care record(s) to the Medical Control Authority. The Medical Director may review all helicopter activations for appropriateness.

**Michigan
SYSTEM**
INFECTION CONTROL
AND COMMUNICABLE DISEASE

Initial Date: 03/24/2023
Revised Date: 06/27/2023

Section: 8-10

Infection Control and Communicable Disease

PURPOSE: To outline procedures for infection control through personal protective equipment use and decontamination for people, equipment, and vehicles utilized in assessment, treatment, and transport of patients along with categorization and response for exposure. ALL patients are considered potentially infectious.

NOTE: Any information obtained or exchanged regarding communicable disease exposures must be handled with strict confidentiality.

I. PRECAUTIONS AND PREVENTION

A. Standard Precautions and Body Substance Isolation (BSI)

1. Purpose: To prevent the transmission of all bloodborne pathogens that are spread by blood, tears, sweat, saliva, sputum, gastric secretions, urine, feces, CSF, amniotic fluid, semen, breast milk, skin rash and open wounds.
2. Rationale: Medical history and examination cannot identify all patients infected with bloodborne pathogens.
3. Practice: Standard Precautions/BSI will be done for patient encounters in which the risk of exposure to blood or body fluid exists.

B. Respiratory Precautions

1. Purpose: To prevent the transmission of airborne infections for patients with respiratory complaints.
2. Rationale: Medical history and examination cannot fully identify all patients with transmissible respiratory pathogens. Respiratory complaints include but are not limited to dyspnea, cough, shortness of breath, etc.
3. Practice: Respiratory precautions will be used for every patient with respiratory complaints and/or receiving aerosolized treatments.

C. Precautions for patients highly suspicious communicable disease including but not limited to:

1. Fever > 100.5 F with headache or malaise or myalgia, and cough or shortness of breath or difficulty breathing.
2. Pustular, papular or vesicular rash distributed over the body (trunk, face, arms, or legs) preceded by fever with rash progressing over days (not weeks or months) and the patient appears ill.
 - a. Consider the patient to be both airborne and contact contagious.
 - b. Crew PPE and procedures:
 - i. N95 or higher protective mask/respiratory protection
 - ii. Goggles or face shield
 - iii. Gowns

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- iv. Utilized waterless hand sanitizer between glove changes and upon removal of gloves.
- c. Source Control:
 - i. Patient wear a paper surgical mask if tolerated.
 - ii. Cover patient with linen sheet to reduce chance of contaminating objects in area.
 - iii. Patients should be encouraged to use hand sanitizer when tolerated.
- d. Notify the receiving facility as soon as possible of the patient's condition to facilitate preparation of the facility and institution of appropriate infection control procedures
 - i. Confirm entrance and procedure for transfer of patient into facility.
 - ii. Ensure proper notification and preparation of receiving facility for inter-facility transfers.
- e. Vehicles that have separate driver and patient compartments and can provide separate ventilation to these areas are preferred for patient transportation. If a vehicle without separate compartments and ventilation must be used, the outside air vents in the driver compartment should be turned on at the highest setting during transport of patient to provide relative negative pressure in the patient care compartment.
- f. DO NOT REMOVE protective equipment during patient transport.
- g. Discourage non-essential personnel and family members from entry or accompanying patient in ambulance.
- h. Patient cohorting may occur if resources are exhausted and patients are grouped with same disease. Cohorting should only be utilized as a last resort.
- i. The ambulance(s)/transport vehicle will not be used to transport other patients (or for any other use) until it is decontaminated using the CDC guidelines for decontamination.

D. Procedures

1. Handwashing will be done before and after contact with ALL patients.
2. Nonsterile disposable gloves will be worn with patients that pose a potential exposure through blood or body fluids. Gloves will be changed in-between patients and not used repeatedly.
3. Outerwear (example: gown, coveralls, turnout gear) will be worn if contact with blood or body fluids contamination may occur.
4. Face Protection (including eye protection) will be worn if aerosolization of blood or body fluids may occur (examples include but are not limited to suctioning,

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insertion of endotracheal tubes, patient with excessive coughing, invasive procedures).

5. Mouth-to-mouth resuscitation: CDC recommends that EMS personnel NOT perform mouth to mouth, instead use adjunctive aids (pocket masks, face shields, BVM).
6. N95 or higher will be worn during contact with patients with respiratory complaints, during any aerosolizing treatments, and with all mechanically ventilated patients.
7. Mechanically Ventilated Patients (including bag-valve-mask)
 - a. HEPA filtration of airflow exhaust shall be used, EMS provider shall don a simple face mask.
 - i. If no HEPA filtration, EMS provider shall don an N95
 - b. Consult ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive pressure ventilation.

II. CLEANING AND DECONTAMINATION

- A. Wear gloves for ALL decontamination
- B. Non-disposable contaminated articles:
 1. Bag according to agency procedures.
 2. Articles must be decontaminated prior to being placed back into service.
Refer to manufacturer's recommendations for proper cleaning and disinfecting
- C. Disposable contaminated articles
 1. Articles contaminated with blood or body fluids must be bagged and discarded in accordance with MIOSHA guidelines.
- D. Medication/IV Bags or Boxes shall be inspected and all contaminated waste removed prior to bag exchange. If the medication/IV bag or box is contaminated, it must be spot cleaned or laundered prior to being placed back into service.
- E. Linens soiled with blood or body fluids shall be placed in appropriately marked container.
- F. Needles and syringes shall be disposed of in a rigid, puncture-resistant container. Any grossly contaminated container, or one that has reached the 'fill line', should be disposed of appropriately.
- G. Blood spills shall be cleaned up promptly with a solution of 5.25% sodium hypochlorite (household bleach) diluted 1:10 with water or other FDA approved disinfectant.
- H. Non contaminated but utilized equipment will be disinfected after every patient encounter in accordance with MCA approved agency guidelines.
- I. Vehicle surfaces will be disinfected after every patient encounter in accordance with MCA approved agency guidelines.

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III. RADIO COMMUNICATIONS

- A. Radio communications of any kind regarding a communicable disease should be done so in a format that ensures patient confidentiality.

IV. EXPOSURES

A. Definitions:

1. "Emergency source patient" means an individual who is transported to an organized emergency department located in and operated by a licensed hospital or a facility other than a hospital that is routinely available for the general care of medical patients.

2. Definition of Reportable Exposure:

- a. Any breach of the skin by cut, needle stick, absorption, or open wound.
- b. Blood/body fluid splash to the mouth, nose, eye, or other parenteral route.
- c. Blood/body fluid splash into non-intact skin area

B. Reporting Exposures:

1. Police, Fire or EMS personnel who, in the performance of their duty, sustain a needle stick, mucous membrane or open wound exposure to blood or other potentially infectious material (OPIM) may request, under Public Act 368, Section 333.20191, that the patient be tested for HIV/Hepatitis B and C surface antigen. The exposed individual shall make the request on a MDHHS Form (DCH-1179): [First Responder Provider Request for HIV and/or Hepatitis B Testing of Emergency Patient.](#)

C. Cooperating Hospitals' Responsibilities

- 1. Each cooperating hospital in the Medical Control region will designate an infection control contact to serve as liaison(s) with the staff of medical control and all EMS agencies for the purpose of communicating information about infectious patients or potential exposures.
- 2. Hospitals, upon learning that any patient has a reportable infectious or communicable disease, will check the patient chart to determine if any EMS agencies were involved with the patient prior to hospitalization. When determined that EMS may have had contact with the patient, designated individual will notify the EMS agency for further follow-up and complete the required State forms.
- 3. Hospitals, when requested to do so, will obtain lab tests and results on source patients when exposure to a pre-hospital provider has occurred.
 - a. Hospitals will report the results of testing on MDHHS Form (DCH-1179) and return to the address indicated on the form.
- 4. Hospitals will notify transporting agencies at the time a transfer is scheduled if any infection potential exists with the patient and the precautions necessary (standard precautions and/or mask).

D. Pre-hospital Agency Responsibilities

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval: 9/10/2025

MCA Implementation Date: 11/1/2025

MDHHS Approval: 6/27/23

MDHHS Reviewed 2023

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1. Each pre-hospital provider agency will be responsible for assuring that their personnel, trainees and students are familiar with infection control procedures, epidemiology, modes of transmission and means of preventing transmission of communicable disease per CDC guidelines and MIOSHA regulations.
 2. Each pre-hospital provider agency will be responsible for supplying personnel with the appropriate personal protective equipment.
 3. It is recommended that each pre-hospital provider agency ensures adequate immunizations per CDC Immunization Guidelines for Health Care Workers.
- E. Follow-up Care/Counseling
1. Follow-up care and counseling of exposed personnel shall be the responsibility of the pre-hospital provider agency and shall be carried out without delay upon notification of exposure.
- F. Summary of EMS Personnel Post-Exposure Procedures
1. Irrigate and wash exposed area very well.
 2. Notify agency supervisor of possible exposure.
 3. Each exposed individual complete section 1 and sign form DCH-1179 (E) and sign
 4. If source patient is transported submit (in person or via fax) DCH-1179 (E) form at hospital receiving the source patient
 5. Contact (preferably in person but may be by phone) the emergency department of the health care facility receiving the source patient and review Section 1 of DCH-1179 (E).
 - a. The health care facility authorized staff member will complete Section 2 of the form and determine if an exposure did or did not occur. If determined exposure did occur, the health care facility will:
 - i. Complete testing of source patient for HIV, Hepatitis B, and other pathogens, as applicable
 - ii. Rapid HIV testing should be conducted
 - iii. If HIV rapid testing is positive, the health care facility will coordinate appropriate post exposure prophylaxis for the exposed individual.
 - iv. Section 3 of form DCH-1179 (E) will be completed
 - b. If determined that an exposure did not occur, the health care facility will explain the rationale of determining that it was a non-exposure.
 - c. The exposed individual, health care facility, agencies and the Medical Control Authority will comply with all parts of Public Act 368, Section 333.20191
 6. The exposed personnel shall follow up with the agency occupational health in accordance with agency requirements.

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7. If the patient is deceased and not transported to a hospital
 - a. If the source patient remains on scene or is transported to somewhere other than a hospital, collaboration between the medical examiner's office (if applicable), EMS agency, the agency occupational health provider and/or the medical control authority should be notified to facilitate source patient testing.
8. If the source patient is living and not transported the exposed individual should work with the EMS agency, the agency occupational health provider and/or the medical control authority for potential testing of the source patient.
 - a. The EMS agency may contact the individual with a request for prompt testing.
 - b. The exposed personnel and EMS agency shall follow up with agency occupational health and the medical control authority.
- G. Any first responders (Police, Fire or EMS personnel) who may have had an exposure should be encouraged to follow the protocol as described.

Protocol Source/References: [Testing and Reporting \(including HIV and STI Case Reporting Forms and Aphirm\) \(michigan.gov\)](#)

**DCH-1179, FIRST RESPONDER PROVIDER REQUEST FOR HIV
AND/OR HEPATITIS B TESTING OF EMERGENCY PATIENT**

Michigan Department of Health and Human Services (MDHHS)
In Accordance with Michigan Public Act 419 of 1994 (MCL 333.20191)
(Revised 11-22)

NOTICE TO EXPOSED INDIVIDUAL:

- Test results will not be provided over the telephone.
- This request should be made before the emergency patient is released from the health care facility.
- Contact the health care facility if the interpretation of test results on the emergency patient is not received by you within ten (10) days.
- **Information contained on this form is confidential.**
- See page 3 for PA 431 and non-discrimination information.

SECTION 1 – To be completed by EXPOSED INDIVIDUAL (Please Print)

1. Name of Exposed Individual	2. Job Classification	☐ Good Samaritan
3. Home Address (Number & Street, etc.)	City	State Zip Code
4. Home Phone Number		
5. Name of Employer	6. Employer Phone Number	
7. Employer Address (Number & Street, etc.)	City	State Zip Code
8. Emergency Source Patient ID Number	9. Date of Exposure	10. Approximate time of Exposure
		☐ AM ☐ PM
11. Route of Exposure		
☐ Open Wound ☐ Mucous Membrane ☐ Percutaneous ☐ Other		
12. Provide a detailed description of the exposure (attach an additional sheet as needed)		

13. Personal Protective Equipment used when exposed (check all that apply)			
☐ Glove	☐ Gown	☐ Eye Protection	☐ Face Mask
☐ Turnout Gear	☐ None	☐ Other explain	
14. Based on my exposure described above, I am requesting that this source individual be tested for the following (check all that apply)			
☐ HIV	☐ Hepatitis B	☐ Other explain	
15. Where do you want the Test Results Sent to: (check all that apply)			
☐ Me at my Home (Address Above)		☐ My Physician (Complete #16 below)	
☐ Me at Work (Address Above)		☐ Other Health Care Professional (Complete #17 below)	
16. Name of Your Physician		Physician Phone Number	

Physician Address (Number & Street, etc.)	City	State	Zip Code

17. Name of Other Health Care Professional	Other Health Care Professional Phone Number

Other Health Care Professional Address (No. & St.)	City	State	Zip Code

- I understand that the NAME of the source individual to be tested, and that person's test results are confidential according to Section 5131 of Michigan Compiled Laws (MCL). I understand that a person who discloses information in violation of this Section is guilty of a misdemeanor.
 - I also understand that I am ultimately responsible for the payment of the charges associated with the testing of this individual to whom I have been exposed, unless an agreement has been worked out between me and my employer, or is otherwise covered by my health care or benefits plan.
-

18. Signature of Exposed Individual	Date

- "First Responder Provider" is defined as a police officer, fire fighter, or an individual licensed under MCL.333.20950 or 333.20952 as one of the following: medical first responder, emergency medical technician, emergency medical technician specialist, paramedic, or an emergency medical services instructor or coordinator. A lay citizen, or Good Samaritan, if they assist an emergency patient, may also be included as a pre-hospital provider (for purposes of this law).
 - "Emergency source patient" means an individual who is transported to an organized emergency department located in and operated by a licensed hospital or a facility other than a hospital that is routinely available for the general care of medical patients.
-

SECTION 2 – EVALUATION OF EXPOSURE – To be completed by the HEALTH CARE FACILITY.

1. Name of Exposed Individual	2. Emergency Source Patient ID Number

3. Based upon the information provided ☐ Exposure DID Occur (see #4 below)	☐ Exposure DID NOT Occur (see #5 below)

4. Exposure DID Occur – The type of exposure was determined to be ☐ Open Wound ☐ Mucous Membrane ☐ Percutaneous ☐ Other

Was the emergency patient informed at the time of admission about the possibility of being tested if a first responder exposure occurred? (In accordance with MCL 333.5133)?	☐ Yes ☐ No

NOTE: The Exposed Individual **SHOULD BE** counseled and tested for HIV and Hepatitis B. Testing for hepatitis C is also recommended although it is not mentioned in the law. Prophylaxis should also be considered for the exposed individual. If appropriate, please refer the exposed individual for follow-up medical evaluation.

5. Exposure did not Occur – Explain

Print Person's Name	Job Title

Authorized Signature at Health Facility	Date

SECTION 3 – TEST RESULTS – to be completed by the HEALTH FACILITY

☐ HIV ☐ Hepatitis B ☐ Other **explain**

HIV: Rapid Test: ☐ Reactive* ☐ Non-Reactive
 EIA: ☐ Reactive ☐ Non-Reactive
 Western Blot: ☐ Reactive ☐ Non-Reactive ☐ Indeterminate

Hepatitis B: HBsAG: ☐ Found ☐ Not Found

*HIV Rapid Tests are for screening purposes only. A reactive Rapid Test requires follow-up testing to confirm patient status.

☐ Emergency source patient refused testing/to have blood drawn.

☐ Emergency source patient expired before test(s) could be performed.

☐ Emergency source patient was released from the health care facility before testing could be performed.

☐ Emergency source patient did not present to this facility for care.

Date Test Results were Reported Out

Print Name and Title of Person Providing Test Results Signature of Person Providing Test Results

Test Results were Mailed to (Name)

Address Results were mailed to (Number & Street)	City	State	Zip Code

The Michigan Department of Health and Human Services will not exclude from participation in, deny benefits of, or discriminate against any individual or group because of race, sex, religion, age, national origin, color, height, weight, marital status, partisan considerations, or a disability or genetic information that is unrelated to the person's eligibility.

AUTHORITY: PA 419 OF 1994 (M.C.L. 333.20191

COMPLETION: Is voluntary, but is required if testing of the source patient is desired.

Initial Date: 5/31/2012

Revised Date: 12/27/2022

Section 8-11

Immunization & Testing

Purpose:

To allow paramedics or other Medical Control Authority (MCA) approved personnel to provide testing and vaccinations for agency personnel and the community. Community immunization and other public health applications are important duties that EMS personnel may perform as determined necessary in cooperation with the medical control authority, local hospitals, and the local public health department. Training will be approved by the EMS Medical Director and the MCA, and may be accomplished under the direction of the MCA and/or local public health department.

1. Indications for immunization and/or testing:

- A. Public or EMS agency personnel may be immunized or tested under guidelines developed by the public health department or MCA. Testing may include tests for infectious diseases or other diagnostic testing as needed.
- B. Age groups for immunization will be determined by the MCA or public health department as appropriate.
- C. Timing of immunizations or testing will be determined by the MCA, hospital, EMS agency and public health department to comply with public health needs or agency immunization requirements as determined by agency infection control guidance.
- D. Immunizations or testing may be performed in clinic, NEHC, mass immunization or agency setting as approved by the MCA and/or local public health department.

2. Immunization or testing

- A. Immunizations may be administered via intramuscular (IM), subcutaneous (SQ), or intranasal (IN) route in dosing determined by guidance provided by the MCA or local public health department as required for the agent administered.
- B. Screening will be performed as determined appropriate for the agent administered by the MCA or local health department.
- C. TB tests are intradermal and require additional training and certification in order to perform. Tests will be interpreted by paramedics performing the tests or personnel trained to review TB tests under MCA approved training programs.

3. Training

- A. Training for immunization will be provided by local public health department personnel or under an approved MCA program.

4. Personnel requirements

- A. Immunizations or testing may be performed by paramedics trained by local public health department personnel or under approved MCA training programs.

5. Record keeping

- A. A record of public or agency personnel receiving immunizations or TB testing will be maintained by the agency performing the immunizations or TB testing as determined by the local public health department/Medical Control Authority.
- B. The Michigan Care Improvement Registry (MCIR) record keeping is required for immunizations.

Initial Date: 09/2004

Revised Date: 12/27/2022

Section: 8-12

Communications Failure

Purpose: To allow for continued patient care activities in the event of a communications failure or inability to contact medical control.

Procedure

1. With a communications failure or inability to contact medical control, EMS personnel may initiate medical treatment protocols and procedures including interventions identified after the "Post-Medical Control" section.
2. Contact medical control as soon as communications can be established and inform them of the situation, including care or procedures rendered.
3. Notification to the MCA of the communication failure will occur within 24 hours.
4. The electronic patient care record will have a protocol deviation noted and the circumstances around the communication failure described in the narrative section.

NOTE: This procedure is considered a protocol deviation and will only be used in exceptional circumstances.

**Michigan
SYSTEM**
**ELECTRONIC RECORDS &
EMS INFORMATION SYSTEM**

Initial Date: 08/28/2020
Revised Date: 05/30/2023

Section 8-13

Electronic Records & EMS Information System

I. Responsibility for Records

- A. Any PCR software utilized by an EMS agency must be compliant with the National EMS Information System (NEMSIS) system and the Michigan EMS Information System (MIEMSIS) as determined by the department.
- B. All PCR are considered confidential medical records and must be treated in accordance with state and federal law.
- C. Signed electronic or paper PCR shall be maintained by the EMS agency as the official medical record for each patient treated and/or transported.
- D. All original PCR reports will be made available to the receiving facility, the MCA and the Bureau of EMS, Trauma and Preparedness, in electronic format, upon request.

II. Submission to MIEMSIS Data Repository

- A. All agencies must transfer data at least monthly. Reporting period begins at 00:00:01 hours on the 1st day of the calendar month, ending at midnight on the last day of the calendar month. Data must be uploaded by the 15th of the month following the close of the reporting period. MCAs may require data to be transferred more frequently.
- B. Agencies performing invasive skills (including supraglottic airways) must transfer data at least daily. PCR that include invasive skills will be available in MIEMSIS within 24 hours of incident completion.
- C. If technology permits, transfer should occur at the time of incident completion.
- D. Agencies are responsible to work with their MCA(s) and the department to ensure that the quality of the data submitted to the MIEMSIS repository is an accurate reflection of the information entered into their EMS information system. Agencies are responsible for ensuring accuracy in data element mapping, accuracy in data value coding, list compliance, and accuracy in data transfer between the vendor and the MI-EMSIS system. Agencies may access MIEMSIS to verify the submission of their records at any time.
- E. Agencies entering data from paper PCR after-the-fact are responsible for entering those PCR in accordance with the above time frames.
- F. All PCR transferred to MIEMSIS must be compliant with the Michigan Required Elements.
- G. All PCR transferred into MIEMSIS will use values from Department provided lookup lists.

III. Utilizing Data

- A. The MCA professional standards review organization (PSRO) will utilize data submitted by the life support agencies for the purpose of providing professional oversight and for improving the quality of medical care within the MCA region.
- B. MCAs may utilize aggregate data that does not identify the patient or agency to support EMS system and public health activities.

**Michigan
SYSTEM**
**ELECTRONIC RECORDS &
EMS INFORMATION SYSTEM**

Initial Date: 08/28/2020

Revised Date: 05/30/2023

Section 8-13

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- C. MCAs may choose to maintain its own repository and in turn submit the data to the Department of Health and Human Services.
- D. The information accessed by the MCA is confidential in nature and is intended for the medical control PSRO. Data protection is critical and is provided for through 1967 PA 270, MCL 331.531 to 331.533, other applicable confidentiality laws, and use and user agreements. The MCA will:
1. Only use or disclose data for the purposes described in Part 209 of the Public Health Code and the Michigan Administrative Code R 325.22101 through R 22217. Any other uses or disclosures will be made only as required by applicable laws.
 2. Use appropriate safeguards to prevent use or disclosure of the information other than as provided by this agreement.
 3. Limit access to the data to only those employees assigned to perform the functions under the above statute and administrative rules and who have signed a data user agreement on file with the Department.
 4. Report any actual or suspected breach, intrusion, or unauthorized use or disclosure to the Department and the affected life support agency within 10 days of becoming aware of such breach, intrusion, or unauthorized use or disclosure or such shorter time period as is reasonable under the circumstances.
 5. Mitigate the effects of any breach, intrusion, or unauthorized use or disclosure.
 6. Notify the Department when anyone with a signed user agreement and access to data systems leaves their position. Notification should occur within 24 hours.
 7. Comply with the Michigan Identity Theft Protection Act notification procedures at MCL 445.61 et seq.
 8. As a public body subject to the Freedom of Information Act (FOIA), redact all personal identifiers or other information pursuant to applicable FOIA exemptions. 1976 PA 441: MCL 15.231 et seq.
- E. **CARES Data**
1. The LSA will submit data for out-of-hospital cardiac arrest (OHCA) patients to the Cardiac Arrest Registry to Enhance Survival (CARES).
 2. If multiple agencies are on scene the transporting agency is responsible for CARES data entry.
 3. The agency completing the CARES record will collect applicable CARES dispatch elements.
- F. **Confidentiality**
1. The EMS patient care record is a confidential patient care document and is not to be released to anyone other than those involved in the patient's care or Professional Standards Review Organization, without the patient's written release of information permission.

Initial Date: 09/2004

Revised Date: 12/27/2022

Section: 8-14

Protected Health Information

Purpose:

- I. To provide a standard for sharing protected health information (PHI) with entities that function in the capacity of a life support agency.
- II. To promote and improve overall patient care and pre-hospital EMS activities, Medical Control Authorities shall establish patient care quality improvement programs. Patient care information will be utilized in these programs for quality improvement activities only and shall conform to all state and federal patient confidentiality and privacy laws.

Policy:

- I. Medical Control Authorities and their Professional Standards Review Organization (QI Committee) will collect patient care information through retrospective review of patient care records generated and supplied by all life support agencies.
- II. Patient care records will be completed on all patients where any type of care or assessment has occurred.
- III. Each responding pre-hospital care provider shall complete Medical Control approved documentation, a copy of which may be forwarded to Medical Control Authority for quality improvement purposes.
- IV. The Medical Control Authorities shall hold all patient care information in strictest confidence.
- V. Quality Improvement within the Medical Control Authority shall be conducted under the Professional Standards Review Organization, which may be comprised of representatives from various pre-hospital agencies. No patient identifiers will be used or shared during reporting of any retrospective QI reviews of patient care.
- VI. Patient outcomes may be tracked by pre-hospital agencies and/or Medical Control Authorities and may be shared among pre-hospital agencies, including Medical First Response agencies, responsible for patient care. No patient identifiers will be used or shared during reporting.
- VII. Patient care audits may occur as part of the QI process. No patient identifiers will be used or shared during reporting. Aggregate data will be shared with pre-hospital agencies using no patient identifiers. This data will be used for education, remediation and overall improvement of system processes.

Initial Date: 09/2004

Revised Date: 03/03/2025

Section: 8-15

Inter-facility Patient Transfers

Purpose: The purpose of this protocol is to establish a uniform procedure for inter-facility transfers. Providers of inter-facility transfers must have MCA privileges in the MCA in which the transfer begins or ends unless otherwise indicated (per MCA selection).

MCA Approval for Inter-Facility Transfer Resource Expansion

- ☒ Inter-facility transfers initiated within the MCA may be carried out by providers that hold MCA privileges in an MCA other than the sending or receiving MCA.

The MCA is responsible for establishing guidelines and communications for this process and maintain a roster of providers . Providers will provide care under their originating MCA protocols unless otherwise specified.



1. Responsibility:

- A. Patient transfer is a physician-to-physician referral. The transferring physician is responsible for securing the acceptance of the patient by an appropriate physician at the receiving facility prior to the transportation. The name of the accepting physician must be included with the transfer orders.
- B. It is the responsibility of the transferring facility to:
 - a. Perform a screening examination.
 - b. Determine if transfer to another facility is in the patient's best interest.
 - c. Initiate appropriate stabilization measures prior to transfer.
- C. During transport, the transferring physician is responsible for patient care until arrival of the patient at the receiving facility.
- D. It is the transferring physician's responsibility to know and understand the training and capabilities of the transporting EMS personnel.
- E. BLS that have received training may transport the following patients with IV access (per MCA selection)

MCA Approval for BLS care during Interfacility transfer

- ☐ Capped peripheral/central lines without fluid or medication
- ☐ Isotonic IV fluids without medications on dial-a-flow (may not adjust flow rate)
- ☒ Isotonic IV fluids on a pump (may not adjust flow rate)
- ☐ IV Antibiotics that have been infusing for at least 15 minutes prior to departure (on a pump or dial-a-flow and may not adjust flow rate).
- ☐ IV Lipids/TPN (on a pump or dial-a-flow and may not adjust flow rate)
- ☒ PCA Pump

Initial Date: 09/2004

Revised Date: 03/03/2025

Section: 8-15

F. Additional/Accompanying Staff (Non-EMS personnel) assigned for transfer by physician:

- a. The transferring physician is responsible for ensuring the qualification of accompanying staff.
- b. Accompanying staff will render care to the patient under the order of the transferring physician.
- c. It is the responsibility of the transferring facility to arrange for the return of staff, equipment, and medications.

2. Transportation

A. Pre-transport

- a. Care initiated by the transferring facility that requires continuation during transport, along with additional treatment(s) will be determined by the transferring physician.
- b. Orders for treatment shall be provided in writing to the EMS personnel prior to initiation of the transport by the transferring Physician.
 1. A mutually agreed upon primary form of communication with the transferring physician for the duration of the transfer.
- c. Ordered medications not contained within the EMS System Medication Box must be supplied by the transferring hospital.
- d. EMS personnel must be trained in all the equipment, procedures, and medications being used in the patient's care during the transfer. see **ENHANCE PARAMEDIC INTERFACILITY CARE/CRITICAL CARE PROTOCOL**
- e. Patient care, procedures, equipment, or medications that exceed EMS personnel training require additional/accompanying staff (see section 1.F. above).
- f. EMS personnel have the right to decline transport that is outside their scope of practice and/or training when additional/accompanying staff is unavailable.
- g. The following information should accompany the patient (but not delay the transfer in acute situations):
 1. Copies of pertinent hospital records
 2. Written orders during transport
 3. Any other pertinent information including appropriate transfer documents.

B. During Transport

- a. Hospital supplied medications not used during transport must be appropriately tracked, wasted and documented.
 -  1. All controlled substances and Propofol must have a documented chain of custody.
- b. The concentration and administration rates of all medications being administered will be documented on the patient care record.
- c. Interventions performed enroute, and who performed them, will be documented on the patient care record.

Initial Date: 09/2004

Revised Date: 03/03/2025

Section: 8-15



- d. Intervention beyond the written orders provided by the transferring Physician, require contact with the transferring Physician.
- e. Order of operation for care and communication when unable to contact the transferring physician.
 - 1. Follow Medical Control approved Protocols under which the EMS agency has Medical Control privileges and initiate contact with:
 - a. Receiving physician
 - b. On-line Medical Control Physician from the sending facility.
 - c. On-line Medical Control Physician from the receiving facility
 - d. Closest appropriate on-line Medical Control facility.

3. Special Treatments

-  A. Interfacility High Flow Nasal Oxygen (HFNO) (per MCA selection)

Interfacility High Flow Nasal Oxygen

Included?



Yes



No

- a. See **Interfacility High Flow Nasal Oxygen-Procedure Protocol**
- b. Ensure adequate supply of oxygen is available for transport.
 - 1. Calculate amount of oxygen needed prior to departure.
 - 2. Must have minimally two times the amount of oxygen calculated.

Initial Date: 09/2004
Revised Date: 03/03/2025

Section: 8-15

Medication Custody Form

Patient Name

EMS Staff Receiving Medication

Name

Signature

**Hospital Staff Sending
Medication**

Name

Signature

Medication	Amount Received From Hospital	Administered	Wasted

EMS Staff Wasting Medication

Name

Signature

Hospital Staff Witnessing Waste

Name

Signature

LICENSURE LEVEL REQUIREMENT OF ATTENDANT
DURING TRANSPORT
(MCA Optional Protocol)

Initial Date: 10/2011

Revised Date: 12/27/2022

Section: 8-16

Licensure Level Requirement of Attendant during Transport (MCA Optional Protocol)

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Purpose: To provide a protocol to fulfill the requirement that allows for EMS personnel to transport patients up to their individual licensure level in the event that the vehicle is licensed at a higher level as set forth in Michigan Administrative Code Part 3, Ambulance Operations R325.22133 (f).

Michigan Administrative Code Part 3, Ambulance Operations R 325.22133 (f) states: that an individual whose license is at least equal to the level of vehicle license is in the patient compartment when transporting an emergency patient, or consistent with department approved medical control authority protocols.

- I. Patient care transport level is to be determined by the individual(s) whose license is at least equal to the level of the vehicle license. This individual will perform a patient assessment to determine the level of patient care transport. The electronic patient care record must reflect this assessment both as a procedure and in components of the assessment.
 - A. EMT-Basic may attend in the patient compartment during transport on a patient deemed to be within the scope of practice for an EMT-Basic as defined by the State of Michigan.
 - B. EMT-Specialist may attend in the patient compartment during transport on a patient deemed to be within the scope of practice for an EMT-Specialist as defined by the State of Michigan.
 - C. EMT-Paramedic may transport a patient at any level.
- II. Ambulance(s) must maintain minimum staffing in accordance with Public Health Code Act 368 of 1978 Section 333.20921:
 - (3a) If designated as providing basic life support, with at least 1 emergency medical technician and 1 medical first responder.
 - (3b) If designated as providing limited advanced life support, with at least 1 emergency medical technician specialist and 1 emergency medical technician.
 - (3c) If designated as providing advanced life support, with at least 1 paramedic and 1 emergency medical technician.
- III. An appropriate licensed health professional, designated by a physician with an established patient relationship may be present in the patient compartment of the ambulance in place of EMS staffing, according to 333.20921 (6).

Initial Date: 09/2004

Revised Date: 04/28/2023

Section: 8-17

Medical Control Privileges

Purpose: To establish minimum requirements for licensees applying for and retaining medical privileges within the jurisdiction of this medical control.

- I. Minimum requirements for providers
 - A. EMS personnel shall possess a valid State of Michigan license.
 - B. EMS personnel shall possess a valid BLS Healthcare Provider card.
 - C. Personnel licensed at EMT-Basic and above are subject to other MCA specific requirements as outlined below
- II. Minimum Life Support Agency Requirements
 - A. Valid State of Michigan license.
 - B. Medical Control approved electronic documentation tool for submitting patient care records.
 - C. Responsibility for their EMS personnel meeting the requirements of this and other applicable protocols.
 - D. Compliance with protocols.
 - E. Notification of the medical control authority if they are unable to meet or comply with any protocol, statutory or regulatory requirement.
 - F. Compliance with the minimum staffing and equipment requirements as defined in P.A. 368 of 1978, as amended.
- III. Scope of Privileges
 - A. A licensee's scope of medical privileges shall be granted to the equivalent of those granted his/her employer agency operating within the jurisdiction of this medical control authority.
 - B. In circumstances where a licensee is dually employed, he/she may exercise privileges to the limit of his/her employer agency of the moment (i.e., a paramedic who is employed by an advanced life support agency and a medical first responder agency may only practice to the level of privileges granted to the agency on whose behalf he/she is acting).
- IV. Disciplinary Notifications
 - A. A licensee must inform the MCA within (1) business day of any suspensions or revocations of MCA privileges in any other MCA in which the licensee has privileges.
 - B. A licensee must inform the MCA within (1) business day of the receipt of an MDHHS issued Notice of Intent to Suspend (NOIS), Notice of Intent to Revoke (NOIR), Emergency Order (of any kind), or Compliance Order.
- IV. Training Standards Required by MCA: mark and specify as applicable

Applicable to all EMT and above



☒	Written Exam
☒	ICS 100
☒	ICS 700
☒	MCA Orientation
☐	Pre-hospital Trauma Certification (PHTLS, ITLS, FTC)
☒	Practical Competency (EMT Skills)

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 2/9/24

MCA Implementation Date: 3/25/24

MDHHS Approval: 4/28/23

MDHHS Reviewed 2023

Initial Date: 09/2004

Revised Date: 04/28/2023

Section: 8-17

- ☒ Upon application for MCA privileges the licensee must disclose to the MCA disciplinary actions pending or within the past 12 months, received from any Michigan MCA and/or MDHHS involving a Level 1 or Level 2 infraction.
- ☒ Other MCA requirements as specified/listed below:

Must notify the MCA of any State, MCA or Tribal territory suspension or revocation of their pre-hospital privileges or license. Must be authorized by each employer currently employed by within TCEMCA utilizing TCEMCA EMS Provider Authorization request and other documents.

 Applicable to all Specialist and above

- ☒ Practical Competency (Specialist Skills)
- ☒ Other MCA requirements as specified/listed below:

Must notify the MCA of any State, MCA or Tribal territory suspension or revocation of their pre-hospital privileges or license. Must be authorized by each employer currently employed by within TCEMCA utilizing TCEMCA EMS Provider Authorization request and other documents.

 Applicable to all Paramedic

- ☒ Advanced Cardiac Life Support (ACLS)
- ☐ Pre-hospital Pediatric Certification (PALS, PEPP)
- ☒ Practical Competency (Paramedic Skills)
- ☐ Enhanced Paramedic Interfacility Care
- ☒ Other MCA requirements as specified/listed below:

Must notify the MCA of any State, MCA or Tribal territory suspension or revocation of their pre-hospital privileges or license. Must be authorized by each employer currently employed by within TCEMCA utilizing TCEMCA EMS Provider Authorization request and other documents.

V. Specialty Care Privileges

- ☒ Enhanced Paramedic Interfacility Care (EPIC)
 - A. Trained according to Enhance Paramedic Interfacility Care Protocol
 - B. Access to necessary equipment for Enhanced Paramedic Interfacility Care Protocol
- ☒ Critical Care Interfacility Transport
 - A. Trained according to MCA approved standards
 - B. Access to necessary equipment at time of transport
- ☒ Community Integrated Paramedicine
 - A. Trained according to CIP Program Policy Protocol
 - B. Access to necessary equipment for MCA approved CIP protocols

RESPONSIBILITIES OF THE PARTICIPANTS IN THE MEDICAL CONTROL AUTHORITY SYSTEM

Initial Date: 09/2004

Revised Date: 05/30/2023

Section: 8-18

Responsibilities of the Participants in the Medical Control Authority System

Purpose:

This protocol defines the responsibilities of each administrative segment of the Medical Control Authority system. These segments include the Medical Control Authority itself; the hospitals and freestanding emergency departments (FSED) providing on-line medical direction; and the EMS agencies providing direct EMS services to the public.

- I. Responsibilities of the Medical Control Authority
 - A. The Medical Control Authority is responsible for providing medical oversight for EMS. Hospitals are responsible for administering the Medical Control Authority.
 - B. The Medical Control Authority will issue protocols, with Department approval, as defined by Part 209 of P.A. 368 of 1978, as amended, that reflect current medical practice and address issues as necessary to assure quality pre-hospital patient care.
 - C. In cooperation with the EMS agencies, the Medical Control Authority will coordinate training to implement protocols not included in initial EMS education.
 - D. Ensure that all significantly affected parties in the MCA will have sixty-days' notice for protocol changes (aside from emergency protocols).
 - E. The Medical Control Authority will establish a Professional Standards Review Organization (PSRO).
 - a. PSRO will implement a system wide Continuous Quality Improvement program.
 - b. PSRO will provide an impartial, fair and medically appropriate peer review process.
 - F. The Medical Control Authority will forward to the Department within (1) business day any ODA issued to a licensee that restricts their ability to practice (i.e., suspension or revocation of MCA privileges)
- II. Responsibilities of Participating Hospitals and Free Standing Emergency Departments (FSED) Providing On-Line Medical Direction
 - A. A hospital or FSED within the Medical Control Authority system providing on-line medical direction to EMS providers will assure that any physician or physician designee authorized to providing such direction:
 - a. Has access to the current MCA approved protocols
 - b. Provides medical direction consistent with MCA approved protocols.
 - B. Each hospital or FSED providing on-line medical direction will encourage the participation of a representative of its Emergency Department physician staff with the Medical Control Authority.
 - C. Hospitals or FSEDs will promptly inform their Emergency Department physicians and staff of Medical Control Authority policy and protocol changes.

RESPONSIBILITIES OF THE PARTICIPANTS IN THE MEDICAL CONTROL AUTHORITY SYSTEM

Initial Date: 09/2004

Revised Date: 05/30/2023

Section: 8-18

III. Responsibilities of EMS Agencies

- A. Agencies will operate under the Medical Control Authority and comply with Department approved protocols.
- B. Assure only persons currently authorized to do so by the Medical Control Authority will provide pre-hospital patient care.
- C. Each EMS agency will assure that their personnel have current training and certifications as required by **Medical Control Privileges Protocol**.
- D. Each EMS agency will immediately notify the Medical Control Authority and the Department if the EMS agency is unable to provide staffing at the level required by its State license.
- E. Licensed EMS vehicles will be equipped with all Medical Control Authority required equipment, if applicable, in addition to that equipment required by the State of Michigan.
- F. EMS agencies will promptly inform their EMS personnel of Medical Control Authority policy and protocol changes.
- G. EMS agencies will provide an annual listing of EMS personnel. This listing shall note the license and Medical Control Authority authorization status of each individual.
- H. If an employee of an EMS agency is found to be in violation of a Medical Control Authority protocol, the EMS agency will cooperate with the Medical Control Authority in addressing the violation and taking corrective measures.
- I. Assure training and competency of personnel in the case of new or expanding department approved protocols.

IV. Accountability

- A. The Department designates the Medical Control Authority for a specific geographic area. As such, the Medical Control Authority is accountable to the Department in the performance of its duties.
- B. The hospitals and possibly the FSEDs within the Medical Control Authority system collectively administer this Medical Control Authority. Each individual hospital and FSED that receives emergency patients by ambulance is accountable to the Medical Control Authority to meet the responsibilities listed above. Failure to meet those responsibilities may result in a termination of the ability of a hospital or FSED to provide on-line medical direction or receive emergency patients (by ambulance).
- C. EMS agencies within the Medical Control Authority system are accountable to the Medical Control Authority, as detailed and defined in protocol. Failure to comply with approved protocols may result in sanctions against that EMS agency.

Initial Date: 9/20/2021

Revised Date: 03/24/2023

Section 8-19

On-Scene Physician Interaction

The EMS system will be available at all times to provide support for health professionals in emergency medical settings. It is ready to assume responsibility for patient care upon request of a physician who has initiated treatment of a patient with whom he has an established physician-patient relationship.

The EMS system On-Line Medical Control Physician is considered the highest medical authority at the scene of a medical emergency with a patient unattended by a physician. An on-scene physician who does not have an established physician-patient relationship and wishes to assume responsibility must seek permission from the Medical Control physician in order to do so.

EMS Personnel are to receive orders for interfacility patient care from the referring physician provided those orders are consistent with the training of the paramedic and the **Interfacility Patient Transfer Protocol**. If the patient's condition changes to the point that the sending facilities orders did not meet the needs of the patient, the patient will become the responsibility of the EMS system. Appropriate treatment will be performed based on the MCA protocols or from an on-line medical direction.

Procedure:

A. Physician's Office, Clinic or Ambulatory Patient Care Facility

1. Physician Office, Clinic or Ambulatory Patient Care Facility to hospital transfers are considered scene calls unless a physician-to-physician transfer is designated by the Physician Office, Clinic or Ambulatory Patient Care Facility. EMS personnel will take responsibility for the patient as if the patient were coming from a prehospital scene.
2. EMS personnel should obtain pertinent history, from the patient and physician (or designee).
 - a. If no destination chosen, follow MCA transport protocol
 - b. If physician to physician destination decision has been determined, honor that established agreement when possible.
 -  i. If a valid reason exists to not honor the established transport agreement, contact Medical Control.

B. Free Standing Emergency Department (FSED) to Hospital Transfers

1. FSED is defined in the MCA Transport Protocol.
2. A FSED to hospital transfer is considered a physician-to-physician interfacility transfer.
3. EMS personnel responding to a FSED should receive a patient report from the treating physician (or designee). This report should include the physician's assessment, the requested destination, name of the person who accepted the transfer, care to be given during transport, and any potential problems felt likely to occur in route.
4. If EMS personnel do not agree with the destination or proposed orders, they

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ON-SCENE PHYSICIAN INTERACTION

Initial Date: 9/20/2021

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should discuss this with the transferring physician. If an agreement is not reached, medical control should be contacted to determine the destination and care to be given by EMS personnel in route to the hospital.

5. The scope of practice for EMS when performing a FSED to Hospital transfer is determined by the **Interfacility Patient Transfer Protocol**.
6. At the discretion of the FSED physician, the FSED physician or designated facility staff may treat and accompany the patient during transport with the assistance of the EMS system.
7. Upon departure from the scene, contact Medical Control as would be done for any EMS scene patient.

C. Physician On-scene

1. As time and patient condition permit, EMS personnel should make a reasonable effort to establish the identity or credentials of anyone at the scene of a medical emergency (not a covered by previous sections of this protocol) who professes to be a Michigan licensed physician who expresses an interest in participating in patient care activities.
2. An on-scene physician must identify themselves and verify to Medical Control either the fact of an established physician-patient relationship with the patient, or willingness to assume responsibility for the patient and to accompany the patient to the hospital. The Medical Control physician may allow the on-scene physician to provide on-scene Medical Direction and then not accompany the patient to the hospital. Should this occur the Medical Control physician re-assumes responsibility for the patient during transport.
3. The Medical Control physician will verify over the radio his delegation of responsibility to the physician on-scene and the nature of that delegation.
4. A physician on-scene may participate with paramedic(s) in the resuscitation of a patient with permission of Medical Control without assuming full responsibility for the patient. This responsibility will, in this case, remain with the Medical Control physician and the ALS system.
5. It should be noted that responsibility for the patient at the scene rests with the on-line medical control physician. Decisions releasing medical care responsibility to another physician should be considered carefully.
6. If an on-scene health care professional has identified themselves, and obstructs efforts of the paramedic(s) to aid a patient for whom they are called, or who insists on rendering patient care inconsistent with the system standards and resists all invitation to function appropriately to the point where his continued intervention will result in obstruction to rendering good and reasonable patient care, EMS personnel should:
 - a. Request Public Safety Officers become involved, if necessary, so that the team members can continue to provide patient care according to system protocol.
 - b. Communicate the situation promptly to On-Line Medical Control.
 - c. Document the behavior of the on-scene health care professional on the patient care record.

- D. For on scene interaction with Emergency Medicine Residents, Fellows, Medical Control Physicians, and the EMS Medical Director: MCAs may have an optional protocol specific to programs within their area.

Initial Date: 09/2004

Revised Date: 12/27/2022

Section: 8-20

Protocol Deviation

- I. It is acknowledged that there are situations in which deviation from the protocols, policies and procedures may be needed in the interest of patient care.
 - A. In those situations, EMS personnel should request permission for deviation from on-line medical direction whenever possible.
 - B. Unavailability of on-line medical direction and the immediacy of patient care needs may, in very rare instances, prohibit such requests, but those situations should occur rarely.
- II. All instances of protocol deviation must be documented in the EMS patient care record, noting the deviation which occurred and the reason for that deviation.
- III. All deviations performed without online medical control approval must be reported to the MCA with 24 hours.
- IV. All reported deviations will be reviewed within the MCA Professional Standard Review Organization.

Initial Date: 09/2004

Revised Date: 12/27/2022

Section: 8-21

Violent/Chemical/Hazardous Scene

Note: This policy applies to any situation, which may expose EMS personnel to known or potentially violent (e.g., shooting, stabbing, assault, other violent crimes) or other known or potentially hazardous (e.g., hazardous material, chemical, biological) situations.

The medical component of the response to a violent or hazardous incident will operate under the Incident Command System.

I. Procedure

- A. Upon notification of a known or potentially violent situation, the EMS personnel will determine through dispatch, the nature and location of incident and:
 - 1. Violent Situations
 - a. Is assailant/weapon present?
 - b. Assure law enforcement notification?
 - c. Is scene secure?
 - 2. Hazardous materials situation
 - a. Is scene secure?
 - b. Nature and identification of material?
 - c. Assure FD/Hazmat Team notification?

NOTE: The above information should be communicated to responding crews.

II. If the scene is not secured:

- A. EMS personnel will stage an appropriate distance away from the scene to protect themselves from danger.
- B. In hazardous material situations stage upwind, uphill and upstream.
- C. In violent situations EMS personnel will NOT enter a potentially unsecure scene until coordinated by law enforcement command and MUST maintain law enforcement protection.

III. Once on the scene, if the situation changes posing an immediate life or limb threat to EMS personnel:

- A. Attempt to safely exit scene.
 - 1. Exit scene with patient, if possible.
 - 2. Medical treatment protocols may be limited or deferred to assure safety of EMS personnel and patient.
- B. Notify the dispatcher of the assistance needed.
- C. Provide any additional information available – e.g., number of assailants, weapons present/involved, any additional information.

Special Considerations: For those patients, who have been contaminated in a hazardous material incident, refer to **Hazard Contaminated Patient-Special Operations Protocol**.

MEDICAL EXAMINER NOTIFICATION AND BODY DISPOSITION

Initial Date: 10/25/2017

Revised Date: 12/27/2022

Section 8-22

Medical Examiner Notification and Body Disposition (MCA Optional Protocol)

The intent of this policy is to establish standards for proper and respectful disposition, handling, and notifications for a deceased person.

- Refer to **Dead on Scene & Termination of Resuscitation-Procedure Protocol** for determination of when and when not to initiate CPR, and when to terminate efforts.

I. Out of hospital death – Notification of the Medical Examiner

- A. The Medical Examiner's office shall be notified for any out-of-hospital death under the following circumstances:
 1. The individual dies by violence
 2. The individual's death is unexpected
 3. The individual dies without medical attendance by a physician, or the individual dies while under home hospice care without medical attendance by a physician or registered nurse, during the 48 hours immediately preceding the time of death, unless the attending physician, if any, is able to determine accurately the time of death.
 4. If the individual dies as a result of an abortion, whether self-induced or otherwise.
 5. Death of a prisoner in a jail or prison.
- B. Responsibility to notify the Medical Examiner
 1. If a patient is transported to a hospital from the scene, having met the above criteria, EMS shall notify the hospital of the criteria which requires notification. Responsibility for the notification of the Medical Examiner resides with the hospital.
 2. If a patient meeting the above criteria is pronounced dead without being transported to the hospital, the responsibility for notification of the Medical Examiner is shared between law enforcement and EMS personnel having authority for the management of the patient.
 3. Patients who do not meet the above criteria and who are pronounced dead outside of a hospital do not require notification of the medical examiner.
 - a) Any patient who is attended by a physician or registered nurse at the time of death (nursing home)
 - b) Any patient who was under home hospice care and had medical attendance by a physician or registered nurse within the 48 hours immediately preceding the time of death (hospice patient either at home or in hospice facility)

II. Out of Hospital Death – Management, Handling and Movement of Body

- A. A body shall not be moved from the location of death if any mandatory Medical Examiner reporting criteria are present, **unless the ME's office provides**

MEDICAL EXAMINER NOTIFICATION AND BODY DISPOSITION

Initial Date: 10/25/2017

Revised Date: 12/27/2022

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official notification that an autopsy or external examination will not be performed and that the body will be released to the funeral home.

- B. Alternately, the body of a person who has unexpectedly died in a public location may be moved by EMS only after approval from the ME's office. Such approval shall not be requested if there is any indication of violence, criminal activity or if the physical environment may contain evidence related to a cause of death or an injury pattern.
- C. **A situation which does not require notification of the ME's office does allow for movement of the body pending retrieval by the funeral home.**
- D. Bodies must remain attended in the case of an unexpected death. Police should take custody of the body in the instance of an ME case. If there is a significant delay of the funeral home, the body may be left with the family.
- E. Medical devices utilized during care by EMS may be removed from the patient if the body is released by the ME's office to the funeral home (IV's, advanced airways, defibrillation pads, etc.)
- F. Medical devices utilized during care by EMS must remain in place if the ME's office advises that an autopsy or examination will be performed.
- G. If there is evidence of suspicious, violent, or unusual cause of death, caution should be taken to avoid contamination of the scene.
 - 1. In the instance of a scene resuscitation and termination, the identification may be removed from the body. No other personal items may be removed.
 - 2. Bodies may be covered with a sheet when the body is visible to the public or bystanders.
- H. If a body is moved, as permitted in the prior criteria, the location should be to a private, secure and nearby location pending retrieval by the funeral home or the ME's staff.
- I. Bodies must be handled with care and respect for the deceased, the family and the public.

III. Death in an Ambulance – termination of care

- A. Patients with valid DNR orders being transported for any reason, whether due to an emergency condition or during an interfacility transfer, who experience cardiac or respiratory arrest shall have the DNR honored unless, before arresting, the patient expressly withdraws their DNR.
- B. Patients for whom transport was initiated but who, during transport, meet the criteria for either Dead on Scene or Termination of Resuscitation protocols, and for whom On-line Medical Control (OLMC) has approved a termination of resuscitation (as required by those protocols respectively), may have care terminated while still en route to the hospital.

MEDICAL EXAMINER NOTIFICATION AND BODY DISPOSITION

Initial Date: 10/25/2017

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IV. Death in an Ambulance – transportation of body

- A. In the event of a patient death in an ambulance, the body shall be transported to the original destination hospital if the call was originally from a scene to a hospital or from a facility to a hospital (transfer).
 - 1. The patient's body shall be brought to the Emergency Department
 - 2. The patient will be registered to accommodate both the transfer of custody and for preservation of evidence, if indicated
 - 3. The Medical Examiner shall be contacted by the hospital and the disposition of the body shall be according to the direction of the ME.
- B. If a patient is being transferred to a nursing home or to their home, immediately following discharge from a hospital, and death is determined, the body should be brought back to the hospital from which they were discharged, unless the patient is a hospice patient.
 - 1. If the patient is a hospice patient and hospice will be meeting you at the destination, or the destination is a hospice facility, you may continue on to the destination and relinquish the body to hospice personnel. This is permitted, without notification of the Medical Examiner, since the patient was both a hospice patient and received medical attendance within the 48 hours immediately preceding the time of death. However, if the death was unexpected, the Medical Examiner must be notified.
 - 2. If the patient is a hospice patient, and hospice personnel will not be meeting you at the destination, continue on toward the destination, contact a supervisor from your agency and evaluate the situation. Where you ultimately go is dependent on how far you are from the destination, if family was intending to meet you at the destination, if the death was unexpected and any confounding factors. The body may not be left without there being a custodial transfer from EMS to an appropriate healthcare provider.
 - a) Consider contacting the hospice care provider
 - b) Consider consultation with online medical control
 - c) If the death was unexpected, contact the Medical Examiner
- C. If a patient is being transferred from a facility to an appointment, or vice versa, where neither the starting or ending destination was a hospital:
 - a) If no DNR exists, treat and transport the patient to a hospital
 - b) If a DNR exists but the patient is not a hospice patient, determine death, honor the DNR, and transport the body to a hospital
 - c) If a DNR exists and the patient is a hospice patient, determine death; honor the DNR, refer to IV(B)(1) and (2) above.

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Safe Delivery of Newborns

Purpose

According to Public Act 488 of 2006 and Public Acts 232, 233, 234, and 235 of 2000, parents may surrender their newborn child to any hospital, fire department, police station, or call 911 from any location and remain anonymous. This protocol outlines steps to be taken in this circumstance. ***IMPORTANT* While there is opportunity for information gathering through forms, the surrendering parent has the option of remaining completely anonymous and disclosing no information.**

Definitions

Newborn: A child who a physician reasonably believes to be not more than 72 hours old.

Emergency Service Provider (ESP): A uniformed or otherwise identified employee or contractor of a fire department, hospital, or police station when such an individual is inside the premises and on duty. ESP also includes a paramedic or an emergency medical technician (EMT) when either of those individuals is responding to a 9-1-1 emergency call.

Surrender: To leave a newborn with an emergency service provider without expressing an intent to return for the newborn.

Procedures

1. The surrender of the infant must occur inside the fire department, police station or in response to a 9-1-1 emergency call to paramedics or EMT.
2. In the instance of a parent attempting to surrender a newborn to a staffed ambulance, not on an emergency call, immediately notify dispatch and establish an emergency call.
3. To protect the parent's right to anonymity/confidentiality, the EMS agency responding to a 9-1-1 emergency call from a parent(s) wanting to surrender a newborn, should not use the vehicle sirens or flashing lights.
4. The firefighter, police officer, paramedic or EMT personnel cannot refuse to accept the infant and must place the infant under temporary protective custody.
5. Fire departments, police stations, paramedics and EMTs have statutory obligations under the law, including:
 - a. Assume that the child is a newborn and take into temporary protective custody.
 - b. Ask surrendering person(s) if they are the biological parent(s). If they are not the biological parent(s) the newborn cannot be surrendered under the Safe Delivery of Newborns law.
 - c. Make a reasonable effort to inform the parent(s) that:
 - i. By surrendering the newborn, the parent(s) is releasing the newborn to a child placement agency to be placed for adoption.
 - ii. He or she has 28 days to petition the Circuit Court, Family Division to regain custody of the newborn.

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- iii. There will be a public notice of this hearing and the notice will not contain the parent(s) name.
 - iv. The parent(s) will not receive personal notice of the hearing.
 - v. Information the parent(s) provides will not be made public. A parent(s) may contact the Safe Delivery of Newborns hotline for information. The toll-free number is: **866-733-7733**
6. Provide the parent(s) with written material from the Department of Health and Human Services that includes:
- a. Safe Delivery Program FACT Sheet (DHHS Pub 867)
 - b. What Am I Going To Do? (DHHS Pub 864) Optional
7. Make a reasonable attempt to:
- a. Reassure parent(s) that shared information will be kept confidential.
 - b. Encourage parent(s) to identify him/herself.
 - c. Encourage the parent(s) to share any relevant family/medical background, Voluntary Medical Background Form for a Surrendered Newborn (DHHS Form 4819).
 - d. Inform the parent(s) of the newborn he or she can receive counseling or medical attention.
 - e. Inform parent that in order to place the child for adoption the state is required to make a reasonable attempt to identify both parents. Ask for the non-surrendering parent's name. Do not press if the name is refused.
 - f. Inform the parent(s) that he or she can sign a release for the child that could be used at the parental rights termination hearing, Voluntary Release for Adoption of a Surrendered Newborn (DHHS Form 4820).
8. Fire and Police may contact emergency medical services (EMS) to transport newborn to hospital. ESP will accompany newborn to the hospital to provide hospital with any forms completed by the parent(s) and to transfer temporary protective custody.
- a. Note: Temporary protective custody cannot be transferred to EMS. A representative of the fire department or police station must go to the hospital to transfer temporary protective custody to the hospital.
9. The responding EMS crew will transport the newborn to closest appropriate facility, according to the MCA transport protocol, provide any forms completed by parent(s) and transfer temporary protective custody to hospital staff.

* For Safe Delivery purposes EMS is defined as a paramedic or emergency medical technician.

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Michigan's
Safe Delivery of Newborns Law
FACT Sheet
SAFE. LEGAL. ANONYMOUS.

Background:

Michigan lawmakers passed the Safe Delivery of Newborns Law to end the tragedy of unwanted newborns being hidden and left to die in unsafe places. More than 100 newborns were surrendered in the first 10 years the law was in effect, with the majority of these infants adopted by loving families.

What the law provides?

- Unharmful newborns, up to 72 hours old, can be taken to an Emergency Service Provider (ESP), meaning a uniformed or otherwise identified employee or contractor of a fire department, hospital or police station who is inside the building and on duty. ESP includes a paramedic or EMT when either responds to a 9-1-1 call. The parent(s) has the choice to leave the infant without giving any identifying information to the ESP.
- The ESP is authorized to accept the infant and provide whatever care may be necessary.
- The ESP will make a reasonable effort to provide the parent(s) with the following information:
 - A written statement of the parent's rights following surrender of the infant.
 - Information about other confidential infant placement options, as well as information about the availability of confidential medical and counseling services, such as Public Health, Community Mental Health, Family Planning Clinics, Adoptions Agencies.

What are the rights of the surrendering parent?

- To be informed that by surrendering the newborn, the parent is releasing the newborn to a child placing agency to be placed for adoption.
- To petition the court to regain custody of the newborn within 28 days of surrender or notice of surrender.
- Any information the parent(s) provides the ESP will not be made public.
- A criminal investigation shall not be initiated solely on the basis of a newborn being surrendered to an ESP.
- To file a consent to release identifying information with the Adoption Central Registry.



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CONFIDENTIAL
VOLUNTARY MEDICAL BACKGROUND FORM FOR A SURRENDERED NEWBORN
Michigan Department of Human Services

Preference for Child's Name	Date of Birth
Where was the child born?	Sex

SURRENDERING PARENT BACKGROUND (Optional)

Name		Marital Status ☐ S ☐ M ☐ D		Date of Birth	Phone Number
Address					
Race		Affiliated with American Indian Tribe ☐ YES ☐ NO		Identify Tribe	
Height	Weight	Hair Color		Eye Color	
Any Family History of:		Yes	No		
Sickle Cell Disease	☐	☐			
Heart Disease	☐	☐			
Diabetes	☐	☐			
HIV	☐	☐			
Hepatitis	☐	☐			
Other	☐	☐			
Surgical History					

OTHER PARENT BACKGROUND (Optional)

Name		Marital Status ☐ S ☐ M ☐ D		Date of Birth	Phone Number
Address					
Race		Affiliated with American Indian Tribe ☐ YES ☐ NO		Identify Tribe	
Height	Weight	Hair Color		Eye Color	
Any Family History of:		Yes	No		
Sickle Cell Disease	☐	☐			
Heart Disease	☐	☐			
Diabetes	☐	☐			
HIV	☐	☐			
Hepatitis	☐	☐			
Other	☐	☐			
Surgical History					

INFORMATION ABOUT THE PREGNANCY

Length of Pregnancy	Weight Gain Lbs.	Drug or Alcohol Use During Pregnancy ☐ Yes ☐ No. If yes, Explain

EMERGENCY SERVICE PROVIDER OBSERVATIONS

Comments			
ESP Signature		Date	Phone Number
Address:	City	State	Zip Code

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VOLUNTARY RELEASE FOR ADOPTION OF A SURRENDERED NEWBORN BY PARENT
Michigan Department of Human Services

In the matter of _____, a newborn child.

1. I, _____, DOB ____/____/____ am the ☐ mother ☐ father
of the above child, who was born on ____/____/____ at _____
(place)

2. I understand that I have parental rights to this child and that by signing this release, I voluntarily release all of my parental rights to my child. (Subject to number three below.)

3. I understand that I have 28 days after surrendering my newborn child to petition the court to reclaim custody of my child.

4. I understand that I will not receive notice of any hearings.

5. Understanding the above provisions, I release completely and permanently my parental rights to my child, and release my child to a child placing agency for the purpose of adoption.

6. I acknowledge receipt of the following:

____ Fact Sheet (Pub 867)

Date ____/____/____ Parent Signature _____

Address _____

City _____ State _____ Zip _____

Witnessed by _____

Name (type or print)

on _____, at _____
Date Agency and Address

Signature _____

IF A NOTARY IS AVAILABLE: Notary Public

Subscribed and sworn to before me on _____
Date County and State

My commission expires: _____ Signature: _____
Date

Name (type or print)

AUTHORITY: State P.A. 232 of 2000
RESPONSE: Voluntary
PENALTY: None

Department of Human Services (DHS) will not discriminate against any individual or group because of race, sex, religion, age, national origin, color, height, weight, marital status, political beliefs or disability. If you need help with reading, writing, hearing, etc., under the Americans with Disabilities Act, you are invited to make your needs known to a DHS office in your area.

DHS-4820 (Rev. 5-07) MS Word

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Surrendering Parent Rights

By surrendering your newborn, you are releasing your newborn to a child placing agency to be placed for adoption.

You have 28 days after surrendering your newborn to petition the court to regain custody.

After the 28 days end there will be a hearing to terminate your parental rights.

There will be a public notice of this hearing; however, the notice will not contain your name.

You will NOT receive personal notice of the hearing.

Any information you are willing to provide to an Emergency Service Provider will NOT be made public.

For more information on safe delivery call the hotline at: 866-733-7733

The card below is detachable.
Please keep it with you or pass it along to someone you think it may help...

A newborn can be surrendered within 72 hours of birth inside any hospital, fire department, police station or by calling 9-1-1.

SAFE. LEGAL. ANONYMOUS.
HOTLINE: 866-733-7733



www.michigan.gov/safedelivery

Did You know

**you can...
surrender
your baby
at a
SAFE PLACE**

- ✓ hospital
- ✓ fire department
- ✓ police station
- ✓ by calling 9-1-1

SAFE. LEGAL. ANONYMOUS.

The Michigan Department of Health and Human Services (MDHHS) does not discriminate against any individual or group because of race, religion, age, national origin, color, height, weight, marital status, genetic information, sex, sexual orientation, gender identity or expression, political beliefs or disability.

DHS-Pub-864 (Rev. 11-15) Previous edition obsolete.

SAFE. LEGAL. ANONYMOUS.

Please don't abandon your baby!

Surrender Your Baby

Michigan's
Safe Delivery of Newborns Law

HOTLINE:
866-733-7733





What am I going to do?

Young and Scared?
You may be a teen or a young adult who is not ready emotionally or financially to be a parent. Maybe you have been able to keep your pregnancy a secret. But now what? You have a choice to take your newborn to a safe place.

What is a Safe Place?
If your baby is three days old or less, it is not a crime to surrender your newborn to an employee of a hospital, fire department, or a police station. You may also call 9-1-1.

No One Needs to Know...
You can leave without giving your name. It would help the baby if you have some basic health information. However, you do not have to answer any questions. It is YOUR choice.

Surrender Your Baby
SAFE. LEGAL. ANONYMOUS.

What Happens to Your Baby?
If your baby needs medical attention, he or she will receive it. The professional staff person who accepts the baby will contact an adoption agency. Social workers will place the baby with a pre-adoptive family. There are many families who want to adopt. The plan is to make sure your baby has a good home where he or she can grow up healthy and happy.

It's Your Choice...
Maybe you made a mistake. But you can make a good choice now. You can choose a safe place for your newborn. It is a decision that will help you and your baby. Your baby can have a family.

**Michigan's
Safe Delivery of Newborns Law**
SAFE. LEGAL. ANONYMOUS.



LOOK FOR THIS SIGN!

PLEASE DON'T ABANDON YOUR BABY

Surrender Your Baby
Michigan's
Safe Delivery of Newborns Law
SAFE. LEGAL. ANONYMOUS.



HOTLINE: 866-733-7733

PSRO COMPLAINT INVESTIGATION & RESOLUTION

Initial Date:

Revised Date: 02/25/2026

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PSRO Complaint Investigation & Resolution

Purpose: To provide a consistent framework for how to receive, investigate, and resolve allegations regarding EMS clinicians, or Life Support Agencies (LSA), under the purview of the Medical Control Authority (MCA) that fosters a just culture process focused on producing safer patient outcomes, identifying root causes, and outlining expected behaviors by EMS clinicians and Life Support Agencies.

NOTE: Terms contained in Section X. Definitions, on page 11, are underlined the first time they appear in this document for ease of identification.

I. Allegation Intake:

- A. An allegation may be received at the MCA directly, at life support agencies, hospitals, or by the Department.
- B. Those in receipt of an allegation which involves violations of protocols, statutes, or administrative rules must inform the MCA in writing.
- C. The MCA will conduct an assessment to determine if further review is required.
- D. The complainant for a case should be asked if they would like to remain anonymous or to allow their information to be included in the record of the allegation.
 1. The complainant must provide the MCA with his/her name, address, and telephone number. A request for anonymity by a complainant must be honored by the MCA to the extent possible.
- E. Allegations considered for action by the receiving MCA, must meet the following criteria:
 1. The allegation must be directed toward an EMS clinician, or a Life Support Agency (LSA), or involve issues of performance of the EMS system within the jurisdiction of the MCA.
 2. The allegation must include a potential violation of Michigan law, Federal law, Michigan EMS administrative rules or local MCA protocols.
 3. An allegation must be in writing or transcribed if by telephone.
 4. Notable deviations from quality improvement projects may be considered for investigation at the recommendation of the Medical Director.
 5. Near misses reported by the EMS system may be accepted for review to determine root causes to develop improvements for system shaping factors.
- F. Allegations that will not be considered for action by the receiving MCA include the following:
 1. Hearsay or “second hand” allegations will not be accepted or investigated.
 2. MCA Quality Improvement initiatives will be reviewed through the MCA Quality Improvement process and normal deviations will not be considered allegations.

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3. Allegations regarding the conduct of an EMS clinician or LSA not related to medical practice or actions bearing upon patient care, unless covered by MCA protocol. These will be referred to the employer of the EMS clinician, or LSA.
4. Allegations directed toward an individual acting while employed by a Life Support Agency outside of the jurisdiction of the MCA must not be accepted or investigated but will be forwarded, or the complainant directed to, the MCA/agency under whose jurisdiction it does fall.
 - a. These allegations may also be retained by the MCA for investigation by the PSRO committee at the discretion of the MCA.

II. Allegation Delegation:

- A. MCAs may cooperate on investigations which overlap jurisdictional boundaries. For the purposes of Quality Improvement Actions, the MCA granting Medical Control privileges to the provider or agency where the primary action, or actions being investigated took place must be considered the jurisdictional MCA.
- B. Allegations more appropriately investigated at the agency or operational level may be turned over to the life support agency or hospital involved. Investigation results are to be reported back to the MCA for review within 30 calendar days.
 1. Noncompliance by partnering agencies to complete reviews within assigned timeframe will be returned to the PSRO committee for investigation and determination of both the original incident and any subsequent violation(s) by the agency.

III. Investigation of Allegation:

- A. Initial Investigation Process:
 1. Once an allegation is determined to meet the criteria, the allegation will be assigned to the Professional Standards Review Organization (PSRO) committee, or an MCA designee for investigation.
 2. All allegation investigations will be based on Department approved MCA protocols, administrative rules, or statutes that were active on the date of the EMS call for service.
 3. The member(s) of the PSRO, or MCA designee, charged with the allegation investigation, will initiate a preliminary review of the allegations and gather information to determine its validity.
 4. To determine validity of the allegation(s), the PSRO or MCA designee may request and review copies of documents, patient care reports, incident reports, video and audio recordings, or other materials relating to the allegation without formal notification to the named EMS clinician or LSA.

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- a. The EMS clinician, and/or the LSA, will have five (5) business days to provide the requested documentation or statements to the MCA.
 - b. This timetable may be extended by the PSRO, or MCA designee, based on the circumstances of the case.
 5. To determine validity of the allegation(s), the PSRO, or MCA designee, charged with the allegation investigation may conduct fact finding interviews with EMS clinicians, or other individuals involved in the response.
 6. The PSRO, or MCA designee, charged with the allegation investigation will then present the findings to the MCA Medical Director, or the PSRO committee, for determining subsequent actions.
 - B. Disposition of Allegations after initial investigation process:
 1. The Medical Director, or PSRO committee, may choose from the following actions based on the initial investigation:
 - a. **NO ACTION** is required against the EMS clinician or LSA.
 1. In this circumstance the Medical Director, or PSRO committee may choose that No MCA action is appropriate when:
 - a. The allegation was unproven, not factually accurate, or unfounded,
 - b. The MCA Medical Director supports the LSA's quality improvement plan,
 - c. There was an identified system shaping factor that created the situation that was outside of the control of the EMS clinician or LSA.
 - b. The incident was caused by **human error** or **at-risk behavior**.
 1. In this circumstance the Medical Director, or designated committee, may issue a Letter of Remediation based on the review of the case after meeting with the EMS clinician or LSA.
 2. Specific case circumstances may need increased quality improvement actions (i.e. Order of Disciplinary Action). These cases are to be referred to the PSRO committee for a formal review.
 - a. Justification must be included to support the decision.
 3. Repetitive infractions by the EMS clinician or LSA may constitute a reason to increase the designation and require a formal review by the PSRO.
 - c. The incident was caused by **justifiable risk**.
 1. In this circumstance the Medical Director must refer the situation to the PSRO committee for review to determine the root cause and discuss potential system improvements.
 - a. No action will be taken against the EMS clinician or LSA when a finding that a system shaping factor created a justifiable risk, or a near miss event performed in the manner documented.

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- d. The incident was caused by **reckless behavior** or a **substantial and unjustifiable risk**.
1. In this circumstance the Medical Director may choose from the following:
 - a. An immediate Emergency Suspension of MCA privileges when there is a definable risk to the public health and welfare, pending a full review by the designated PSRO committee.
 - i. Possible situations where the Medical Director may consider this action appropriate:
 - a. Criminal Behavior
 - b. Severe Clinical Misconduct
 - c. Substance Abuse
 - d. Unfit to practice
 - e. Violation of medical standards
 - f. Insubordination
 - ii. Refer to the Emergency Action section of this protocol for process.
 - b. Refer the case to the designated PSRO committee for review and decision on outcome.
 2. Allegations deemed valid due to **reckless behavior**, or **substantial and unjustifiable risk** by the Medical Director, must:
 - a. The MCA must provide formal notice to the EMS clinician or LSA requesting participation at an upcoming Professional Standards Review Organization (PSRO) meeting to discuss the event.
 1. For an EMS clinician, notice will be provided to both the individual EMS clinician and the LSA administrator.
 2. For a LSA, notice will be provided to the agency administrator.
 - b. The notice must include, but is not limited to:
 1. A description of the alleged violation.
 2. A list of protocols impacted by the alleged violation, including the Complaint Investigation and Resolution and any other protocols that will be used in the investigation and instructions on how to access.
 3. Instructions detailing any required actions of the subject EMS clinician or LSA (e.g., appearance dates, times, and locations or documentation requests).
 - c. Notice must also be provided to individuals requested to appear before the PSRO as witnesses, including those asked to participate in interviews or provide testimony to the full body of the PSRO.
 - d. For all nonemergency action reviews, the MCA will provide at least three (3) business days of advanced notice to affected individuals and agencies prior to convening PSRO meetings for which they must attend.

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3. Any action issued directly by the Medical Director without the involvement of the PSRO committee must be reported at the next scheduled PSRO meeting for review and to ensure awareness and the identification of system trends.

IV. Emergency Action – Temporary Suspension of Privileges:

- A. If the MCA Medical Director believes there is a definable threat to public health, safety, or welfare, they may immediately act by temporarily suspending privileges pending a further review.
 1. In the event the emergency action is related to criminal charges being filed against an EMS clinician or LSA related to acts of violence, diversion of medications, illegal possession of controlled substances, criminal sexual conduct, or other situations which may pose a direct threat to the community or patients, the MCA may act with a suspension of MCA privileges without convening a special PSRO meeting.
 - a. The subject licensee or agency shall be notified in writing of the suspension.
 - b. If found guilty in a court of law, MCA privileges will be revoked.
 - c. If found not guilty of charges, the individual or agency must provide copies of court documents, including transcripts, to the MCA for review and determination of suspension.
 - d. If a court case is dismissed based on procedural failings or errors, the MCA may decline to extend privileges if the conduct of the individual or agency may pose a threat to the community or patients. This determination is to occur during a PSRO meeting where the individual or agency is present to provide information relevant to the situation.
- B. Formal notification to the EMS clinician or LSA by the MCA of the immediate suspension of privileges as well as the allegations for which the action is based on will be provided by the end of the business day.
 1. The LSA must be included on all communications with the EMS clinician.
 2. Medical Control Authority must notify the Department within one (1) business day of the removal of medical control privileges from an EMS clinician, or LSA.
- C. The Medical Control Authority PSRO committee must convene a special meeting within three (3) business days of the Medical Director's decision to review the case and decide the outcome of the case.
- D. The EMS clinician or LSA may request, prior to the scheduled date, a one-time postponement of the PSRO meeting of up to thirty (30) calendar days to prepare their response to the allegations.
 1. This request for postponement must be received in writing within one (1) business day prior to the scheduled meeting time.

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- E. The PSRO committee must provide a written decision to the EMS clinician or LSA following the meeting and within three (3) business days of the emergency action being taken.
 - 1. If the PSRO committee needs additional time to deliberate, the meeting may be adjourned and additional meeting(s) scheduled.
 - 2. If additional meetings are needed, a final decision still must be issued to the EMS clinician or LSA by the PSRO committee within three (3) business days of the emergency action being taken.
- F. If an EMS clinician or LSA's MCA privileges have been suspended, the EMS clinician or LSA must not provide prehospital care within the MCA until the PSRO committee has made their decision.

V. Due Process:

A. Notice

- 1. The EMS clinician or LSA have the right to be informed of all allegations made against them. Formal notification by the MCA to the subject of an allegation will occur if a formal Quality Review Inquiry is opened.
- 2. If the subject of a Quality Review Inquiry is an EMS clinician, notification will also be made to the subject's applicable employing LSA at the same time.
- 3. Reference to all applicable investigation protocols and instructions regarding how to access them must be included with notification of a Quality Review Inquiry.
- 4. The MCA will provide at least three (3) business days of advanced notice to affected clinicians and agencies prior to convening any PSRO meetings to which they must attend.

B. Opportunity to be heard

- 1. The subject has the right to present their side of the case, respond to evidence against them, and challenge witness statements or allegations. The subject must be given the opportunity to respond to the allegations, including the opportunity to present supporting evidence.
- 2. The subject must be provided with copies of all relevant investigation related materials for review.
- 3. The subject will be afforded reasonable time to review such materials prior to being interviewed by the PSRO committee.
- 4. The subject may request the related materials in advance of the interview with the PSRO committee. The MCA will make reasonable efforts to accommodate such requests at the discretion of the Medical Director.
- 5. Materials that would reveal the identity of an individual that provided information under the condition of anonymity are exempt from this provision.
- 6. All investigation materials must be reviewed at a special meeting of the PSRO

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called for that purpose and must not be removed or otherwise distributed without the express permission of the Medical Control Authority.

C. Impartial Decision Making

1. All PSRO complaint investigation committees must be comprised of decision-makers who are able to remain impartial during the review.

D. Representation

1. Subjects of a PSRO review may have agency representation at proceedings of the PSRO provided PSRO standards are maintained.
2. The MCA is not a hiring entity and is not subject to collective bargaining. Union representation during proceedings of the PSRO is not permitted.
3. The MCA PSRO is not an adjudicating body for either civil or criminal investigations and is not subject to the rules and statutes which govern civil or criminal adjudication. Attorneys and legal representation are not permitted in PSRO committees.

E. Determination

1. The PSRO committee must provide notice to the EMS clinician or LSA within fourteen (14) business days of the committee meeting.
 - a. If the decision of the committee is to issue an ODA, it must be provided to the EMS clinician or LSA within three (3) business days of the committee's meeting.
2. If the PSRO committee needs additional time to deliberate, the meeting may be adjourned and additional meeting(s) scheduled.
 - a. A final decision must be issued by the PSRO committee within three (3) business days of the initial meeting's date for all ODAs.
 - b. A final decision must be issued by the PSRO committee within fourteen (14) business days of the initial meeting's start date for all other quality improvement actions.
3. The EMS clinician, or LSA will have seven (7) business days from the date of receipt of the ODA to request an appeal of the decision of the PSRO committee. The EMS clinician or LSA must follow the **Order of Disciplinary Action Appeal** protocol.

F. Americans with Disabilities Act (ADA)

1. Non-Discrimination:

The MCA prohibits discrimination based on disability in all aspects, including quality reviews. No individual must be subjected to discrimination or retaliation based on disability.

2. Reasonable Accommodations:

Reasonable accommodation will be provided, when possible, for individuals with disabilities to ensure equal access to the investigation and review process.

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Reasonable accommodations may include, but are not limited to, providing auxiliary aids, modifying policies or procedures, or adjusting scheduled interviews or proceedings.

3. Communication:

Investigators must communicate effectively with individuals with disabilities during the investigation process. This may involve using alternative formats, allowing interpreters, or utilizing assistive technology to ensure effective communication.

4. Confidentiality:

Information related to an individual's disability obtained during the investigation process must be treated as confidential and shared only with those who have a legitimate need to know. Confidentiality safeguards will be implemented in accordance with applicable laws and organizational policies.

VI. Order of Disciplinary Action (ODA) Notification

- A. The Medical Control Authority must notify the Department within one (1) business day of the issuance of an ODA to an EMS clinician, or LSA.
- B. Once the ODA is issued and any appeals are completed, the EMS clinician or LSA to which the ODA is issued must provide a copy of the ODA to all MCAs in which they are privileged for the other MCA's review.
- C. The Medical Control Authority must notify all other Medical Control Authorities which it knows, or has reason to believe, have granted the EMS clinician or LSA Medical Control privileges within one (1) business day.

VII. Disposition of Quality Improvement Action:

- A. A primary function of Quality Improvement Action is to ensure the protection and safety of the community and patients.
- B. The application of the Quality Improvement Action is intended to promote improvement in clinical and operational performance.
- C. The MCA shall engage in a process to ensure that EMS clinicians and LSAs maintain an appropriate level of clinical and operational performance.
- D. MCAs should utilize a just culture approach when applying or considering Quality Improvement Actions to create a balance between provider and system accountability.
- E. The licensee's agency will be notified of any Quality Improvement Action prescribed by the PSRO.
- F. Quality Improvement Actions may or may not be ascending in severity. In cases where misconduct (by action or omission), regardless of where the misconduct occurred, is determined to be reckless, willful, or criminal, ascending discipline may be bypassed with a more severe disciplinary action imposed.

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VIII. PSRO Quality Improvement Determinations

A. No Action –

1. Allegation Unsubstantiated

- a. The MCA PSRO committee, or Medical Director, will compose a letter to the individual alleging the concern that the incident was reviewed through the MCA's confidential Professional Standards Review Organization.
- b. If the MCA PSRO committee, or Medical Director, discusses the allegation with the involved EMS clinician(s), or Life Support Agency, as part of the preliminary review, then the MCA PSRO committee, or the Medical Director should provide verification that the incident was reviewed as part of the MCA's PSRO quality review process and those involved were found compliant with the current standards.

2. Cause was due to system design factors

- a. The MCA PSRO committee, or Medical Director, will compose a letter to the individual alleging the concern that the incident was reviewed through the MCA's confidential Professional Standards Review Organization.
- b. If the MCA PSRO committee, or Medical Director, discusses the allegation with the involved EMS clinician(s), or LSA, as part of the preliminary review, then the MCA PSRO committee, or Medical Director, should provide confirmation that the incident was reviewed as part of the MCA's PSRO quality review process.
- c. These cases are to be referred to the appropriate MCA committee for review and to develop a system improvement plan to mitigate a reoccurrence.
- d. These plans, and cases, must then be reviewed by the MCA Board to assess and implement actions that are available to improve the EMS system.

3. No Action – support of LSA quality improvement plan

- a. The MCA PSRO committee, or Medical Director, will compose a letter to the individual alleging the concern that the incident was reviewed through the MCA's confidential Professional Standards Review Organization.
- b. If the MCA PSRO committee, or Medical Director, discusses the allegation with the involved EMS clinician(s), or Life Support Agency, as part of the preliminary review, then the MCA PSRO committee, or Medical Director, should provide confirmation that the incident was reviewed as part of the MCA's PSRO quality review.

B. Letter of Remediation

1. The Letter of Remediation is a written quality improvement action plan for an EMS clinician or LSA which includes a timeline, SMART goals, and a plan to assess desired outcome.

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2. This quality improvement action may include:
 - a. Requiring the EMS clinician to work with a provider at an equal or higher level of licensure, for a certain period. i.e. complete a field training program, or work with a supervisor for oversight.
 - b. Additional education that does not restrict the EMS clinician's or LSA's privileges within the MCA.
 - c. A probationary period with additional remediation requirements as deemed appropriate.
 3. The Medical Control Authority may choose to issue a Letter of Remediation, when the actions of the EMS clinician's or LSA's were determined to be contributing factor and related to simple human error.
- C. Order of Disciplinary Action
1. An Order of Disciplinary Action (ODA) is a written document developed by the MCA and sent to a subject EMS clinician or LSA for the purposes of clearly and plainly identifying the findings of the MCA.
 2. Disciplinary actions available for inclusion in an ODA:
 - a. Restriction of privileges:
 - i. May entail reducing the EMS clinician's or LSA's level of privileging to a lower level, i.e. from Paramedic to AEMT.
 - b. Suspension of Privileges:
 - i. An EMS clinician's or LSA's medical privileges are suspended for a specified period within the local MCA.
 - ii. If an EMS clinician's or LSA's MCA privileges have been suspended, the EMS clinician or LSA must not provide prehospital care until MCA privileges are reinstated.
 - c. Revocation of Privileges:
 - i. An EMS clinician's or LSA's medical privileges are revoked within the MCA and will require the provider to reapply for privileges after a minimum of one (1) year.
 3. The ODA must include the following provisions:
 - a. Details of the violation of Michigan law, Federal law, Michigan EMS administrative rules or local MCA protocols,
 - b. The restriction of local medical control privileges determined by the PSRO committee,
 - c. Any additional remediation activities that may be required of the EMS clinician or LSA prior to resolution of the ODA,
 - d. The timeframe assigned to complete the PSRO Committee's requirements.

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- e. Copies of, or detailed instructions on how to access referenced protocols as well as the **PSRO Investigation & Resolution** and **ODA Action Appeal** protocols.
 - f. The MCA must demonstrate good faith to ensure that an ODA is received by the EMS clinician or LSA in a timely manner.
 - g. Notice of disciplinary action must be forwarded to the EMS clinician's employer, or board in the case of an LSA.
- D. Emergency Action – Temporary Suspension of Privileges
- 1. The Medical Director may temporarily suspend an EMS clinician or LSA's privileges in cases where there is a definable risk to the public health and welfare.
 - 2. The Medical Control Authority's designated PSRO committee must convene a special meeting within three (3) business days of the Medical Director's decision to decide the outcome of the review as outlined in the Emergency Action and Due Process sections.
 - 3. A final decision must be issued to the EMS clinician or LSA by the PSRO committee within three (3) business days of the emergency action being taken.
 - 4. If an EMS clinician or LSA's MCA privileges have been temporarily suspended, the EMS clinician or LSA must not provide prehospital care within the MCA until the designated PSRO committee has made their decision.

IX. Special Circumstances

- A. EMS Clinician, or Life Support Agency, practicing in the MCA without a current Michigan EMS license.
- 1. These cases are to be referred to local law enforcement agencies and the Department for investigation.

X. Definitions

A. Allegation:

For this policy, an allegation must be defined as any notification of dissatisfaction or concern regarding medical care rendered by an EMS clinician or LSA within the MCA, or any issues that involve the performance of the EMS system in whole or in part.

B. Allegation Unsubstantiated:

The allegation or complaint was found to have no administrative rule or protocol violation or the protocol deviation was considered acceptable for the situation.

C. At-risk behavior:

Describes a situation where an action, or activity, has the potential to be harmful or dangerous, where risk is not perceived or mistakenly believed to be justified.

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D. Due Process:

A course of formal proceedings carried out regularly and in accordance with established rules and principles.

E. Emergency Action:

Situations where the MCA Medical Director believes there is a definable threat to public health, safety, or welfare of the community.

F. EMS Clinician:

One who has a current EMS patient care license in the State of Michigan.

G. Human error:

Describes a situation where an action, or activity, when an unintended sequence of actions does not achieve its intended outcome. Could be considered a slip, lapse of judgment or mistake.

H. Just culture:

A just culture process is a high-level statement of the values and commitment of an organization to treat EMS clinicians and agencies fairly in all investigations.

I. Justifiable choice/deviation:

Describes a situation where an action, or activity, when there is a deviation from protocol, process, or procedure due to the circumstances and change in expected process is deemed safer than if the accepted process was followed.

J. Letter of Remediation:

This is a written defined quality improvement plan for an EMS clinician or LSA which includes a timeline, SMART goals, and a plan to assess desired outcomes.

K. Life Support Agency (LSA):

Refers to an agency and/or the employer of an EMS clinician against which an allegation has been received.

L. Near miss:

Describes a situation where an action, or activity, has the potential to lead to an error occurring, however, due to a system, process, or procedure the situation was identified prior to the error occurring and remedied.

M. No action:

The allegation or complaint did not warrant action by the MCA against the EMS clinician or LSA. This could be because no administrative rule or protocol violation or the protocol deviation was found, the MCA supported the action of the LSA, or there were factors outside of the control of the EMS clinician or LSA.

N. Order of Disciplinary Action (ODA):

This is a quality improvement action taken by an MCA that meets one of the following criteria and must be reported to the Department within one (1) business day:

1. Revocation of MCA privileges of a licensee, or
2. Suspension of MCA privileges of a licensee, or

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3. Restriction of MCA privileges of licensee (i.e., paramedic licensee restricted to working as an EMT or required to complete training prior to returning to the original licensure level within the MCA).

M. Quality Improvement Action:

An action taken to produce safer patient outcomes, identifying root causes, and outlining expected behaviors by an EMS clinician and/or a Life Support Agency.

N. Reckless behavior:

Describes a situation where an action or activity, when there is a conscious decision to disregard approved MCA protocol(s), statute, or Administrative Rules that leads to unjustifiable risk.

O. Repetitive human error:

Describes a situation where an action, or activity, when there is continued human errors which occur by an EMS clinician or LSA after remediation actions have been attempted without correcting actions. Errors may or may not be related.

P. Repetitive at-risk behavior:

Describes a situation where an action, or activity, when there is continued at-risk behavior which occurs by an EMS clinician or LSA after remediation actions have been attempted without correcting actions. At-risk behaviors may or may not be related.

Q. Root Cause Analysis:

Describes a wide range of tools used to improve system performance which uncovers the cause of situations that allowed for an unintentional outcome.

R. SMART goals:

A framework for setting and achieving goals by ensuring they are Specific, Measurable, Achievable, Related (or Realistic), and Time-bound.

S. Substantial or unjustifiable risk:

Describes a situation where an action, or activity, is determined to be intentional and the risk of harm outweighs any benefit.

T. System Shaping Factors:

Describes variables that can impact an EMS clinician or LSA and system performance.

ORDER OF DISCIPLINARY ACTION APPEAL

Initial Date: September 2004

Revised Date: 02/25/2025

Section: 8-25

Order of Disciplinary Action Appeal

Purpose: This protocol is provided to define the steps an EMS Clinician or Life Support Agency (LSA) must take to appeal an Order of Disciplinary Action (ODA) issued by the Professional Standards Review Organization Committee (PSRO) and the Medical Control Authority (MCA).

- I. EMS Clinician or LSA Appeal Request Procedure:
 - A. The EMS clinician or LSA who received an ODA from the MCA may initiate a Request to Appeal if one, or more, of the following apply:
 1. New evidence: There is new material information relevant to the review that was not available, or known, during the original review of the incident.
 2. Procedural Errors: There was a procedural violation of the **PSRO Investigation and Resolution** protocol.
 3. Fraud or Misrepresentation: The decision was influenced by false statements or fraudulent conduct.
 4. Improper Application: The decision was inconsistent, or based on an incorrect interpretation, with the applicable MCA's protocols, Statute or Administrative Rules.
 - B. The MCA must be notified, in writing, within seven (7) business days of receipt of the ODA that the recipient is requesting to appeal. The appeal must include:
 1. A detailed explanation of the reasons for the appeal.
 2. Any relevant material or supporting documentation.
 - C. The submission of a Request to Appeal does not stay the provisions of the ODA.
- II. MCA Procedure
 - A. Upon receipt of a Request to Appeal an Order of Disciplinary Action, the MCA Board chair, in conjunction with the MCA staff, must review the appeal to determine if the appeal meets the requirements outlined in Section I.
 1. If it is determined that the appeal does not meet the requirements for an appeal, the appeal will be returned to the EMS Clinician/LSA requesting the appeal with an explanation why the appeal is being rejected within three (3) business days.
 2. If the EMS Clinician/ LSA decides to resubmit the appeal, they must do so within three (3) business days and include additional justifications as needed to address the MCA's reasons.
 3. Upon receipt of a resubmitted appeal, the appeal will be reevaluated in full.
 - B. The MCA Board chair will assign the appeal to the appropriate committee based on the category of the appeal:
 1. If the appeal is based on the presentation of New Evidence, or an allegation of Fraud or Misrepresentation, the incident is remanded back to the PSRO

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ORDER OF DISCIPLINARY ACTION APPEAL

Initial Date: September 2004

Revised Date: 02/25/2025

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- committee that conducted the medical review for reevaluation of the committee's determination.
- a. A new PSRO meeting must occur within three (3) business days of the MCA Board chair's decision.
 2. If the appeal is based on an allegation of a Procedural Error, the allegation will be referred to the MCA Board, as a formal body, to determine if there was a procedural violation of the **PSRO Investigation and Resolution** protocol.
 - a. If the MCA board finds there are procedural violations in how the medical review was conducted, then the MCA Board must perform one of the following:
 - i. Make a determination on the appeal during the appeal meeting.
 - ii. Assign a new PSRO committee, made up of new decision-making membership, to conduct a new medical review as outlined in **the PSRO Investigation and Resolution** protocol.
 - a) The new PSRO meeting must occur within three (3) business days of MCA Board decision.
 3. If the appeal is based on an allegation of Improper Application. The appeal will be referred to the MCA Board, as a formal body, for determination.
 4. If the appeal is based on multiple categories:
 - a. The appeal will be referred to the MCA Board for determination of assignment and resolution utilizing the process above.
- C. If the appeal is assigned to the MCA Board will:
1. The MCA Board, functioning as a PSRO review committee, must schedule a meeting for the purpose of hearing the appeal. This meeting must be scheduled not less than three (3) business days and not more than thirty (30) business days following receipt of the Request to Appeal.
 - a. Once scheduled the EMS clinician or LSA may request a one-time postponement of up to thirty (30) business days to assemble information pertinent to the appeal.
 - b. This request for postponement must be received in writing within three (3) business days prior to the scheduled meeting time.
 2. Conduct a fair and thorough review.
 - a. During an open session of the MCA Board appeal meeting:
 - i. The EMS clinician, LSA, or their designee may present information supporting their reason for appeal ensuring protected health information is not disclosed.
 - ii. The MCA Board may ask clarifying questions related to the appeal.
 - b. The MCA Board may move into a closed session to review protected information for the purposes of:
 - i. Reviewing the PSRO committee's decision.
 - ii. Reviewing the grounds for the appeal and evaluate whether the MCA protocols were properly followed.
 - iii. Reviewing the decisions that resulted in the issuance of the ODA are consistent with the standards applicable to the disciplinary action.
 3. Determine the outcome of the appeal.

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 5/13/2026

MCA Implementation Date: 7-1-2026

MDHHS Approval: 02/27/2026

MDHHS Reviewed 2026

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ORDER OF DISCIPLINARY ACTION APPEAL

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- a. The MCA Board must return from the closed session into an open session to make a final determination regarding the appeal, choosing only one of the following:
 - i. To affirm the ODA.
 - ii. To revoke the ODA.
 - iii. Diminish the ODA to a lesser disciplinary action (i.e. a suspension of privileges diminished to a written reprimand).
 - iv. To suspend the ODA.
 - b. If the MCA Board needs additional time to deliberate, the appeal meeting may be adjourned and additional meeting(s) scheduled in accordance with the Open Meetings Act.
 - i. A final decision must be issued by the MCA Board within fourteen (14) business days of the appeal meeting's start date.
 - D. The final decision must be provided by the MCA Board in writing to the EMS clinician or LSA within fourteen (14) business days of the appeal meeting's start date.
 - E. If, during the appeal process, new information is discovered that leads to additional allegations, a new investigation must be conducted and the **PSRO Complaint Investigation & Resolution** process followed.

III. Appeal to the EMS Coordinating Committee (EMSCC)

- A. Following exhaustion of the procedure stated herein, an EMS clinician or LSA may appeal the decision of the MCA to the State of Michigan Emergency Medical Services Coordination Committee as defined in Part 209 of P.A. 368 of 1978, as amended Section 20919(4).
- B. The appeal will be to determine whether the actions, or decisions, of the Medical Control Authority were in accordance with their Department approved protocols, statute, or Administrative Rules.
 - 1. Specific facts regarding the underlying case that lead to the issuance of the ODA will not be evaluated and are not to be included in the request for appeal.
- C. An appeal must be filed with the Department of Health and Human Services, in writing, no more than 30 business days following the written notification to the EMS clinician or LSA of the final determination by the MCA.
- D. If a decision of the MCA is appealed to the Emergency Medical Services Coordination Committee, the MCA must make available, in writing, the information it considered in making its decision.

CRIMINAL CHARGES AND CONVICTIONS

Initial Date:

Revised Date: 05/30/23

Section 8.26

EMS Provider Criminal Charges and Convictions

Purpose:

The purpose of this policy is to provide the parameters for EMS licensure related to criminal charges and convictions.

Definitions:

Charge: any formal accusation made by a governmental authority asserting that somebody has committed a criminal misdemeanor or felony (anything other than a civil infraction).

Conviction: any plea of nolo contendere, a guilty plea, or plea agreement, including deferments, as well as conviction(s) after a trial.

Policy:

Failure to disclose a criminal conviction or withholding of any material information regarding such conviction on any application for licensure will be considered a violation of [Section 20958\(1\)\(a\)](#) of the Public Health Code.

An EMS license or licensed EMS provider at any level may be denied, suspended, or revoked, or other appropriate action taken with respect to a felony or misdemeanor criminal charge or conviction under either [Section 20958\(1\)](#) or [Section 20168](#) of the Public Health Code. Applicants that have a criminal charge, may have their license suspended until resolution of the criminal matter.

Procedure:

1. An EMS provider shall notify all their employers and all Medical Control Authority(s) in which they hold MCA privilege(s) in writing within one business day of being charged and/or convicted of a felony or criminal misdemeanor.
2. The Medical Director shall make a determination whether to temporarily suspend privileges within the respective MCA.
3. The Medical Control Authority PSRO will review and make a recommendation regarding the subject licensee's privileges to practice EMS within the MCA.
4. The Medical Control Authority PSRO will notify the MDHHS and the subject licensee of the results.

Protocol Source/References: [Michigan Public Act 368 of 1978 Public Health Code, as amended](#). Parts 201 and 209. Retrieved April 19, 2021, from the Michigan Legislature website.

Tri-County Emergency Medical Control Authority
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Authorization to Function as EMS Personnel in TCEMCA



Initial Date: 03/1/2013

Revised Date: 01/24/2025

Section: 8-26a

Authorization to Function as EMS Personnel in TCEMCA

It is the purpose of this policy to establish a method by which the Medical Director can be assured that EMS personnel have sufficient knowledge of TCEMCA protocols, general EMS treatment principles, and are proficient in practical skills.

It is the policy of TCEMCA that all EMS personnel must have the valid “authorization” of the Medical Director prior to providing pre-hospital emergency medical care within the Counties of Clinton, Eaton, and Ingham. Authorization means “the provision of Medical Control oversight” as defined by MCL 333.20919. This authorization may be withdrawn by the Medical Director, if he/she determines that an individual’s EMS care is a danger to the public health, safety, or welfare; or violates approved protocol. The Medical Director may also ask the State of Michigan to act against the license of an individual for being a danger to the public health, safety, or welfare; or, for violation of approved protocol. Appeal of a decision of the Medical Director may be made following the Disciplinary Action Appeal Protocol 8-25 processes. The most current TCEMCA Authorization form will be utilized, and submitted, for this purpose. The authorization form can be signed by an instructor coordinator (IC), Chief or Director, or a designated person. A designated person is a person the agency designates, on file, with TCEMCA office, to sign the authorization form. The EMS Practical Skills Evaluation shall be completed and signed by a licensed IC. The authorization and skill forms submitted must be complete and accurate. Any falsification of these forms may lead to discipline, up to an including termination of authorization or loss of medical licensure from the state. Forms are submitted through email to: Authorizations@tcemca.org

Authorizations are valid as soon as the email is sent containing the proper authorization forms with the following exemption. Providers applying for authorization who have had, or have, their privilege to provide pre-hospital care, suspended or revoked by any MCA, State of Michigan, or any other state, must indicate this on the Tri-County Authorization Form. Any case where privileges are or were suspended or

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Authorization to Function as EMS Personnel in TCEMCA



Initial Date: 03/1/2013

Revised Date: 01/24/2025

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revoked by an MCA or state, will be reviewed by the MCA, possibly PSRO, and Medical Director for final determination of TCEMCA Authorization. Providers are required to submit, in letter form, an account of the events leading to their suspension and or revocation to provide pre-hospital care. A completed and signed TCEMCA release form may be required to release all records or information surrounding the suspension or revocation as needed.

The Medical Director shall establish, monitor, and revise as necessary a process to evaluate the competency (as described above) of all EMS personnel wishing to function within the TCEMCA boundaries. This process may include testing of knowledge and skills, requirement for outside currency such as ACLS, BLS and/or other methods of determining competency to practice, at the discretion of the Medical Director. The Medical Director shall consider the economic impact of any requirements placed on EMS personnel, per MCL 333.20919(5).

It is the responsibility of the EMS agency's Chief/Director to authorize all personnel under their employ or control, providing Pre-Hospital care, through their department, by TCEMCA to provide pre-hospital care. This includes practical skills (described below), written exam, valid BLS Card, and valid ACLS card per licensure level. TCEMCA authorizations are valid for the department/agency in which personnel are under their employ or control, providing Pre-Hospital Care. If the provider's employment or control is terminated the providers TCEMCA Authorization with that employer is immediately terminated. Providers may possess multiple TCEMCA authorization cards depending on employment status.

Authorization is approved by the Medical Director for TCEMCA providers.

TCEMCA may provide an authorization card for each provider that is authorized to provide pre-hospital emergency medical care within Clinton, Eaton, and Ingham County. The TCEMCA authorization card expires with the expiration of the provider's State EMS license with no "grace period" allowed after printed expiration date. The authorization card is required to

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Authorization to Function as EMS Personnel in TCEMCA



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be returned to the TCEMCA office upon request. Agencies may request TCEMCA not to provide an authorization card to their providers. Authorization and Skills evaluation forms can be found at: TCEMCA.org

Practical Skills Evaluated

MFR, EMT, EMT-S, Paramedic

- Glucometer Usage (if agency equipped)
- Basic Airway Opening Techniques
- Narcan Administration (if agency equipped)
- Epinephrine Administration (if agency equipped)
- Spinal Precautions
- Advanced Supraglottic Airway Management (if agency equipped)
- Capnography (All levels, MFR only if using I-Gel Airways)
- Airway Suctioning
- Assessment of Lung Sounds
- Report Writing
- MI-MEDIC Card understanding/usage

EMT, EMT-S, Paramedic

- CPAP (if agency equipped)

EMT-S, Paramedic

- IV insertion
- Verifying Proper ET Tube placement

Paramedic

- Endotracheal intubation
- Cricothyrotomy, needle or surgical
- Intra-Osseous Insertion
- EKG Interpretation
- Drug Box Inventory/Exchange Process

Practical skills shall be evaluated by a licensed I/C and can be evaluated all at one time, or throughout the license period.

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval: 11/13/2024

MCA Implementation Date: 02/03/2025

MDHHS Approval: 02/03/2025

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Authorization to Function as EMS Personnel in TCEMCA



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Guidelines for IC's EMS Practical Skills Evaluation

Airway Suctioning---Demonstrates basic knowledge of suctioning techniques.

Basic Airway Opening Techniques---Demonstrates various methods of manually opening an airway (Jaw Thrust, Head Tilt, etc.)

Assessment of Lung Sounds---Within the scope of their license level and training, is able to recognize and describe normal and abnormal lung sounds, and their meaning.

Spinal Precautions---Demonstrates proper techniques of spinal immobilization using backboards. Demonstrates ability to use "Spinal Injury Assessment" protocol and when c-collar only should be applied. This should require a "hands-on", detailed demonstration of skills.

Report Writing---Demonstrates the ability to write a complete yet concise report of findings and treatment given. For providers renewing their authorization, base this evaluation on actual reports written. For new providers seeking authorization, their discussion of the subject with the I/C will suffice.

Advanced Supraglottic Airway Management---Applies to MFR/EMT/EMT-S/Paramedic levels; Demonstrates the ability to correctly insert the supraglottic airway, ensure its proper position in the patient, and ensure the patient is being adequately ventilated by the supraglottic airway.

IV Insertion---Demonstrates competency in actual performance of this skill. Ideally, this will be determined by actual field data such as a review of the "success rate" of the applicant in starting IV's. While there is no "magic number" specified, an I/C should give serious thought to certifying competence of a person if, historically, their IV "success rate" is less than 70%. If no historical data is available, such as with a newly licensed person, then competency may be demonstrated on a manikin.

Intra-Osseous Insertion---Demonstrates knowledge of the technique and the special equipment needed.

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Endotracheal Intubation---Demonstrates ability to quickly and correctly intubate a patient. It is preferred that this evaluation be based on actual field intubation data and experience, if available. Competency in intubation of manikins will suffice if actual patient experience is not available.

Verifying Proper ET Tube Placement---Demonstrates knowledge of various methods of verifying tube placement. These would include breath sounds, patient color, pulse oximetry, end-tidal CO₂ monitoring, etc.

Cricothyrotomy---Demonstrates knowledge of the techniques used for both needle and surgical cricothyrotomy. Is familiar with the special equipment needed for each and knows landmarks for proper placement.

EKG Interpretation---Demonstrates the ability to correctly interpret both static and moving EKG rhythm strips. The common "ACLS" type rhythms should be covered.

Naloxone Administration---Demonstrates the ability to identify indications for Naloxone administration, including appropriate dosage and administration route.

igel®-- Demonstrates the ability to correctly insert the igel® airway, ensure proper placement, and verify the patient is receiving adequate ventilation.

Glucometer--- Demonstrates appropriate capillary skin puncture and collection procedure. Ability to identify critical values. Knowledgeable in proper disposal of lancet and bio-hazardous material.

MI-MEDIC---Review understanding of usage, location, Braselow tape location at agency.

Drug Box Exchange Process---Review process of drug box exchange, report or drug box exchange form must be included inside drug box, narcotic box red tagged if used, drug box red tagged, complete inventory every time drug box used prior to exchange.

Epinephrine Administration---Demonstrates the ability to indicate when needed, contraindications, process for drawing up, and administration. Review the 6 Rights of Medication Administration.



Tri-County Emergency Medical Control Authority

Serving Clinton, Eaton, and Ingham County

EMS Provider Authorization Request

("Authorization" means the below named individual has met the standards required to function within the TCEMCA region, under the medical oversight of TCEMCA)

Name: _____
(PLEASE --- Type or Legibly Print)

EMS Agency / Company _____

License Level:

☐
☐
☐
☐

MFR

EMT-B

EMT-S

Paramedic

MDHHS Lic. # _____

MDHHS Lic. Expiration _____

For Agency Use

- ☐ New TCEMCA Provider
- ☐ Renewal
- ☐ New to Agency but in TCEMCA already
- ☐ Remove provider from Agency

BCLS Expiration Date: _____ (All)

ACLS Expiration Date: _____ (Paramedic Only)

TCEMCA Written Protocol Test Date: _____ (All)

TCEMCA Skills Evaluation Date: _____ (All)

TCEMCA Use

Received: _____

Issued: _____

Agency #: _____

Initials: _____

Card Completed: Yes

Certifications:

I have read and understand the current TCEMCA out of Hospital patient treatment protocols and agree to provide patient care only under those protocols and TCEMCA direct (on-line) medical control. Please check the box below to indicate if your MCA Authorization or medical license is or ever has been suspended/revoked from any MCA, the State of Michigan, or by any other state. **If yes, your authorization is not automatic, and you are unable to practice until the circumstances have been reviewed and authorization approved by the TCEMCA Medical Director.**

☐ Yes.

MCA/State: _____

Dates: _____

☐ No.

EMS Provider Signature Date

As an agency we have administered the TCEMCA Written Protocol Review and Practical Skills test to the above applicant and certify that, to the best of our knowledge and belief, the applicant meets the standards established by TCEMCA for those persons wishing to provide EMS care in the TCEMCA region.

IC/Chief-Director/Designated person

License #

Date

Note: This authorization is not intended to be used as a pre-employment screening tool, or as an ongoing assessment of an individual. Each EMS agency is responsible to assess and monitor the abilities, knowledge, and skills of its employees.



Tri-County Emergency Medical Control Authority

Serving Clinton, Eaton, and Ingham County

EMS PRACTICAL SKILLS EVALUATION

Provider _____ Agency _____ Date _____

Licensure level _____ Provider Initials _____

MFR, EMT, EMT-S, Paramedic

Glucometer Usage (if agency equipped) _____
Basic Airway Opening Techniques _____
Narcan Administration (if agency equipped) _____
Epinephrine Administration (if agency equipped) _____
Spinal Precautions _____
Advanced Supraglottic Airway Management (if agency equipped) _____
Capnography (all levels, MFR if using I-Gel Airways) _____
Airway Suctioning _____
Assessment of Lung Sounds _____
Report Writing _____
Mi-Medic Card understanding/usage _____

EMT, EMT-S, Paramedic

CPAP (if agency equipped) _____

EMT-S, Paramedic

IV insertion _____
Verifying Proper ET Tube placement _____

Paramedic

Endotracheal Intubation _____
Cricothyrotomy, needle or surgical _____
Intra-Osseous Insertion _____
EKG Interpretation _____
Drug Box Inventory/Exchange Process _____

My signature below certifies that the above-named provider has met the EMS practical skills standards, as defined by TCEMCA in "Guidelines for IC's", in the performance of the above listed EMS skills.

I/C Signature _____ Date _____ IC License # _____

Developed	7/23/2024	Updated		Implemented		Approval	BP	Form ID	F-004

Michigan
SYSTEM PROTOCOL
QUALITY IMPROVEMENT PROGRAM

Initial Date: September 2004

Revised Date: 6/8/2017

Section: 8-27

Quality Improvement Policy

Purpose: The purpose of this policy is to establish the requirement for a defined Quality Improvement process within the Medical Control Authority (MCA) and with agencies holding medical control privileges. This policy provides a means for evaluation and improvement of protocol and EMS system components and design.

I. Confidentiality Assurance

Information obtained for the purpose of Quality Review will be used to determine if the current protocols in the MCA are being appropriately followed and to improve the protocols and the EMS system. Data is protected under P.A. 270 of 1967, MCL 331.531 to 331.533.

In specific cases where EMS providers may require corrective actions, the emergency medical services personnel names may be given to the agency to address at the agency level.

II. Professional Standards Review Organization

- A. The Professional Standards Review Organization (PSRO) of the MCA is a review entity that is provided information or data regarding the physical or psychological condition of a person, the necessity, appropriateness, or quality of health care rendered to a person, or the qualifications, competence, or performance of a health care provider. The PSRO is a committee established by the MCA for the purpose of improving the quality of medical care and oversight of appropriate protocol compliance within the EMS system.
- B. Agencies shall develop institutional PSROs for the purpose of internal review and improvement. For the purpose of this protocol, PSRO is meant to refer to the PSRO of the MCA.
- C. The MCA's designated PSRO shall perform the duties and functions related to complaints, investigations or quality improvement activities, both prospective and retrospective.
- D. The PSRO may be comprised of members of the board(s), MCA employees and contract staff, EMS agency staff, hospital staff, committee members, and other designated individuals when acting on behalf of, or at the direction of the MCA when performing PSRO tasks.
- E. All Quality Improvement activities shall be performed by the PSRO, and all documents collected for Quality Improvement activities shall be held by the PSRO subject to Michigan's peer review privilege.¹

¹ MCL 331.531 *et seq.*

Michigan
SYSTEM PROTOCOL
QUALITY IMPROVEMENT PROGRAM

Initial Date: September 2004

Revised Date: 06/30/2023

Section: 8-27

III. Data Collection

- A. Electronic Patient Care Reports (EPCR)
The MCA is authorized to obtain access to EPCR originating within their service area; this includes all scene responses, interfacility transfers and critical care transfers. The Medical Control may elect to receive reports on request.
- B. MI-EMSIS Data Collection
 1. Providers and agencies are required to report per **Electronic Records & EMS Information System Protocol and Documentation and Patient Care Records-Procedure Protocol**.
 2. Agencies shall work in cooperation with the MCA, under PSRO, to ensure the quality, consistency and accuracy of data submitted through MI-EMSIS.
 3. The MCA shall maintain access to the MI-EMSIS data and ensure that agencies are accountable for the submission of data.
 4. MI-EMSIS data should be utilized as a tool for the evaluation of performance and function as a driving mechanism for quality improvement.
- C. Other Electronic Data Collection
The MCA is authorized to obtain electronic data and voice recordings from any and all EMS agencies and/or departments, and dispatch agencies with interaction with callers requesting a medical response within the MCA service area. This includes mutual aid responses into the MCA service area. Data will be provided to the MCA's PSRO on a monthly basis or when individual records, recordings and reports are requested. The Medical Control may elect to receive electronic reports on a more frequent schedule.
- D. Ownership of Records
Any documents or data relating to requests for service, records of provided services, records of refused services, dispatch reports and incident reports including all aggregated reports for benchmarking and analysis which are submitted to the PSRO of the MCA, or generated by the PSRO, are privileged. The MCA's PSRO holds ownership of only protected Quality Improvement documents. The submitting agency maintains ownership of any and all original records generated by their agency and personnel.
- E. Incident Report Collection
 1. Incident reports and requests for additional information directed to an individual provider or to an EMS agency/department requested by the MCA/PSRO must be submitted to the MCA/PSRO within 96 hours.
 2. The MCA may establish an online reporting system.

IV. Data Review

- A. Agency PSRO Responsibilities

Michigan
SYSTEM PROTOCOL
QUALITY IMPROVEMENT PROGRAM

Initial Date: September 2004

Revised Date: 6/8/2017

Section: 8-27

Each agency, or department licensed to provide prehospital care, within the MCA area must develop and maintain a PSRO subgroup that reviews, either through a peer evaluation group or individuals tasked with peer review functions, and conducts audits requested by Medical Control.

B. Special Studies

All EPCR that include the use of equipment, skills, techniques or procedures that are currently under special study will be reviewed.

C. Unusual Occurrences

Any EPCR that are unusual and possibly one-time situations that may serve as a learning tool for other services in the future may be reviewed.

D. Problem Identification

1. Potential concerns in patient care may be brought to the attention of the PSRO of the MCA.
2. Topic quality improvement reviews will be performed with results reported to the Medical Control Authority.

E. Sentinel Event Reporting

1. The Medical Control Authority may designate specific items that must be reported.
2. Any intervention where it is reasonable to believe that harm to the patient may have occurred must be reported.

VI. Quality Review Criteria

A. Medical Control Authority Protocols

1. The current protocols in place at the time of the event will be used to review the EPCR selected.
2. Any changes in protocols will not be used for evaluation until the changes are approved and distributed.

B. Dispatch Policies

The review of the EPCR may address dispatch, location, response time, or mutual aid/multi-agency problems.

VII. Quality Improvement Actions

The PSRO, the Medical Director or his/her designee will determine the severity of the incident and develop an action plan to address the matter. The action plan may include:

- A. Revision of policies/procedures
- B. Remediation of individuals involved
- C. Education recommendations for the system
- D. Referral to Due Process and Disciplinary Procedures Protocol
- E. Modification of clinical privileges
- F. Continued monitoring

**Michigan
SYSTEM**
EVIDENTIARY BLOOD DRAW PROTOCOL
(MCA Optional Protocol)

Initial Date: 01/27/2023
Revised Date: 05/30/2023

Section 8-28

Evidentiary Blood Draw Protocol (MCA Optional Protocol)

S *This protocol is for specialist/AEMT and paramedic use only*

☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

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

Purpose

In order to effectively utilize the resources of the Medical Control Authority, licensed Life Support Agencies may allow Paramedics working for them to draw a sample specimen of blood as allowed under the delegation of the Medical Control Authority EMS Medical Director, a licensed physician by the State of Michigan, pursuant to PA 368 (1978) MCL 333.16215 (Public Health Code) and PA 300 (1940) MCL 257.625a (Michigan Vehicle Code) and subsequent amendments reference these Public Acts. This shall be considered a Priority 3 level of service. However, if a patient presents with a medical condition, the General Pre-hospital Care protocol will be initiated.

Definitions

Consent to Search: Permission given by a person authorizing a law enforcement officer to make a seizure or conduct a search.

Implied Consent: A requirement under Michigan Law; all drivers are to have given their consent for a chemical test upon being arrested for Operating While Intoxicated as part of their application and issuance of a driver's license.

Medical Environment: Any area not within a freestanding medical facility(e.g., booking area, jail, or other scene where the paramedics may provide medical care).

Warrant: A precept or writ issued by a competent judge or magistrate authorizing a law enforcement officer to make a seizure or conduct a search.

Procedure

A paramedic may draw a blood specimen if one of the listed criteria is met:

1. When requested by a law enforcement officer, who provides verbal or written verification from the subject who is in custody, that the subject is voluntarily submitting to an Evidentiary Blood Draw as required by Implied Consent under PA 300 (1940) MCL 257.625a (Michigan Vehicle Code).
2. When requested by a law enforcement officer, who is in possession of a consent to search form duly signed by the subject in custody.

**Michigan
SYSTEM**
EVIDENTIARY BLOOD DRAW PROTOCOL
(MCA Optional Protocol)

Initial Date: 01/27/2023

Revised Date: 05/30/2023

Section 8-28

3. When requested by a law enforcement officer, who is in possession of a search warrant duly signed by a magistrate or judge.

This procedure is done at the delegation of the Medical Control Authority EMS Medical Director, a licensed physician, and under the supervision and at the direction of medical control, to draw blood for the purposes of determining the presence of alcohol and/or drugs as allowed for in PA 368 (1978) MCL 333.16215 (Public Health Code) in a Medical Environment.

Pre-Radio

PARAMEDIC

1. Obtain a full set of vital signs.
2. Obtain blood draw kit from law enforcement officer and use the provided contents within the kit for collection.
3. Sample shall be obtained in the presence of a law enforcement officer.
4. Do not use alcohol or alcoholic solutions to sterilize skin surface, needle or syringe.
5. In the presence of a law enforcement officer tell the subject that no alcohol was used in sterilizing the skin surface, needle, or syringe; then draw two tubes of venous blood from subject and upon completion of obtaining the specimen, slowly invert blood collection tube(s) several times to distribute the sodium fluoride/potassium oxalate preservative.
6. Complete blood specimen label(s) by entering name of subject, date and time of blood collection, and your name in ink.
7. In the presence of subject, hand tube(s) of blood and label(s) to law enforcement officer for signing, packaging, and transfer to the laboratory.
8. If the patient has no medical or trauma complaints and the vital signs are within normal limits consider this a treat and release from care.
9. If the patient has a medical or trauma complaint and/or vital signs are outside normal limits, transport the patient to the hospital.
 -  a. If officer refuses transport, contact medical control.

**Tri-County Emergency Medical Control Authority
Systems Protocol
HOSPITAL COMMUNICATIONS**

Date: March 1, 2013

Page 1 of 3

Hospital Communications

1. The use of the patient priority assignment system:

Priority One (1):

An unstable patient having an airway, breathing or circulation problem, which is uncontrolled or deteriorating. An EMS unit is requesting immediate availability of the frequency for physician medical direction.

Priority Two (2):

A stable patient in which an EMS unit anticipates medical direction.

Priority Three (3):

A stable patient in which the EMS unit does not anticipate receiving medical direction. The primary reason for radio transmission is to notify the destination hospital of the EMS unit's arrival time and patient's needs upon arrival.

2. ---The preferred communication system for any patient priority and all levels of EMS service is the "UHF MED Channel", including the Ingham County Hospital talk groups, where applicable.. TCEMCA has a UHF radio system, which makes use of six repeater sites, giving full coverage over the entire three County area. All TCEMCA affiliated hospitals are connected to this system.
---Landline and cellular telephone communications may be utilized for all priority levels, as a backup communication method.
---The HEAR radio system (155.34 MHz) should be reserved for those situations when communication cannot be achieved by other means.

Radio communications should not be utilized for inter-facility transfers or direct admits. Telephone communication to the receiving hospital will be made prior to patient transport. Radio communications may be used if a change in patient status warrants further communications with the receiving hospital.

"On-Line Medical Control", for purposes of these protocols, is defined as the attending ED physician (or designee) at the anticipated TCEMCA receiving facility.

**Tri-County Emergency Medical Control Authority
Systems Protocol
HOSPITAL COMMUNICATIONS**

Date: March 1, 2013

Page 2 of 3

PRIORITY ONE AND TWO PATIENTS:

1. EMS unit identifies itself and the hospital it is attempting to contact.
2. Hospital acknowledges transmission and hospital personnel identify themselves.
3. EMS personnel give their last name and level of licensure.
4. **ETA**
5. **Patient priority assignment.**
6. **Chief complaint**
7. BREAK (if necessary, the hospital would divert at this point.)
8. (If no diversion) Receiving hospital asks EMS unit to continue.
9. **Age and sex of patient.**
10. **Vital signs.**
11. BREAK (Receiving hospital may ask pertinent questions at this time.)
12. Receiving hospital asks EMS unit to continue.
13. **Treatment provided by EMS unit.**
14. **EMS personnel requests orders.**
15. BREAK.
16. Receiving hospital confirms or gives additional orders.
17. EMS unit clears.
18. Hospital clears.

**Tri-County Emergency Medical Control Authority
Systems Protocol
HOSPITAL COMMUNICATIONS**

Date: March 1, 2013

Page 3 of 3

PRIORITY THREE PATIENTS:

1. EMS unit identifies itself and the hospital it is attempting to contact.
2. Hospital acknowledges transmission and hospital personnel identify themselves.
3. EMS personnel give their last name and level of licensure.
4. **Age and sex of patient.**
5. **ETA.**
6. **Patient priority assignment.**
7. **Chief complaint.**
8. BREAK (if necessary, the hospital would divert at this point.)
9. (If no diversion) Receiving hospital asks EMS unit to continue.
10. Vital signs. **(ONLY IF HOSPITAL REQUESTS).**

MCA NAME
SYSTEM PROTOCOL

PROFESSIONAL STANDARDS REVIEW ORGANIZATION AND COMMITTEES

Initial Date: 07/02/2025

Revised Date:

Section: 8-30

Professional Standards Review Organization & Committees

Purpose: To establish a policy for appointing a Professional Standards Review Organization (PSRO) and committees by the Medical Control Authority and to define its authorities, composition, roles, and responsibilities.

I. Authority:

- A. 1978 PA 368 (the “code”), MCL 333.20919(1)(g) requires that the Medical Control Authority (MCA) establish written protocols to ensure that a quality improvement program is in place within the medical control authority and that it provides data protection as defined in 1967 PA 270, MCL 331.531 to 331.534.
- B. The Professional Standards Review Organization (PSRO) of the medical control authority is a “review entity” as defined in 1967 PA 270, MCL 331.531.
- C. As a “review entity,” the PSRO must be provided information or data regarding:
 - 1. The physical or psychological condition of a person/patient.
 - 2. The necessity, appropriateness, or quality of health care rendered to a person/patient.
 - 3. The qualifications, competence, or performance of a health care provider.

II. Policy

- A. Medical control authorities must appoint a Professional Standards Review Organization (PSRO) as defined in this protocol, in accordance with section 20919(1)(g) of the code and administrative rules R 325.22202¹ and R325.22207².
- B. All meetings of the PSRO are closed meetings.
- C. For the purposes of this protocol, PRSO is meant to refer to the PSRO of the MCA.

III. Powers

- A. The PSRO has full authority granted in accordance with 1978 PA 368, MCL 333.20919, and associated regulations, to request and compel the disclosure of all pertinent records, information, data, recordings, or other materials related to the practice of EMS within the jurisdiction of the MCA from all participating members of the MCA.
 - 1. This includes all EMS personnel, life support agencies, hospitals, and prehospital telecommunication centers.
- B. All requests for such materials must be honored in accordance with the MCAs statutory obligations and must be turned over in a timely manner, unless otherwise prohibited by law.

¹R 325.22202(1)(f) a medical control authority shall appoint a professional standards review organization to monitor and improve the quality of medical care.

²R 325.22207(1)(i)(ii) Data must be reviewed by the professional standards review organization of the medical control authority and protected in accordance with section 20919(1)(g) of the code.

MCA NAME
SYSTEM PROTOCOL

PROFESSIONAL STANDARDS REVIEW ORGANIZATION AND COMMITTEES

Initial Date: 07/02/2025

Revised Date:

Section: 8-30

IV. Composition

- A. The purpose of the committee(s) is to ensure a system level peer review perspective of prehospital care within the Medical Control Authority.
- B. To assist in this purpose, the PSRO committee(s) must include at least one licensed prehospital EMS clinician and one Life Support Agency representative currently participating within the local MCA system, representative(s) of the MCA Board and/or MCA staff, and a representative from a participating MCA hospital.
- C. Individuals with expertise in medical care, quality assurance, and relevant areas of EMS and healthcare practice may be included at the discretion of the MCA Board.
- D. Members of the PSRO should possess the necessary qualifications and experience to effectively contribute to the review and improvement process.

V. Confidentiality

- A. All records, data, and knowledge obtained for or by individuals assigned a professional review function of the PSRO are confidential and must not be made public, nor available for subpoena, and are protected from disclosure under Michigan law, including 1967 PA 270, MCL 331.20919(1)(g).
- B. All members of the PSRO, including the subject of a PSRO Inquiry, are subject to confidentiality obligations regarding the materials and discussions that are reviewed.
- C. All participants are prohibited from removing materials from a meeting of the PSRO and from discussing or disclosing any aspect of the materials or discussions with anyone outside of the PSRO without appropriate prior authorization.
- D. The PSRO may disclose deidentified, aggregate data for review by other committees of the MCA, its stakeholders, and the public.

VI. MCA Roles and Responsibilities

- A. The MCA Board is responsible for ensuring that all duties and functions related to complaints, investigations, and quality improvement activities are performed by the PSRO committee including:
 - 1. Request and review EMS patient care reports, hospital charts, data, audio, video, professional credentials, and other materials relevant to professional practice within the EMS system.
 - 2. Assess adherence to applicable statutes, administrative rules, and protocols governing the practice of emergency medical services within the MCA's jurisdiction.
 - 3. Review and make recommendations on professional standards and practices outlined in protocols.

MCA NAME
SYSTEM PROTOCOL

PROFESSIONAL STANDARDS REVIEW ORGANIZATION AND COMMITTEES

Initial Date: 07/02/2025

Revised Date:

Section: 8-30

4. Incident Reviews
 - a. To assess, investigate and make recommendations to the MCA Board pertaining to unusual circumstances, complaints and/or allegations posed by any person(s) regarding EMS activities in the MCA.
 - b. Incidents that must be reviewed
 - i. Unusual Occurrences
 - ii. Protocol Required Reviews
 - iii. Complaints / allegations
 - a. Any complaint will follow the **PSRO Investigation and Resolution Protocol**.
5. Quality Improvement activities
 - a. Identify needs and make recommendations for training and development to enhance professional competencies.
6. Data Collection
7. Mi-EMSIS
 - a. The MCA must maintain access to the Mi-EMSIS data and ensure that agencies are accountable for the submission of data.
 - b. Mi-EMSIS data should be utilized as a tool to assist in the evaluation of performance and function for quality improvement.
8. Research projects
9. Special Studies
10. Audits
- B. MCAs may choose to have PSRO committees which have specific responsibilities based on content expertise. Potential committees could include:
 1. Quality Review Committee, focusing on prehospital quality review inquiries,
 2. Systems of Care,
 3. Emergency Medical Dispatching,
 4. Others as determined by the MCA Board.
- C. PSRO committee members are responsible for attending professional training activities as determined by the local MCA Board, or the Department.

VII. LSA Responsibilities for PSRO

- A. Each life support agency licensed to provide prehospital care within the MCA must develop and maintain a PSRO subgroup that reviews, either through a peer evaluation group or individuals tasked with peer review functions, and conducts audits requested by MCA.
- B. Each life support agency licensed to provide prehospital care within the MCA must ensure all staff are trained and provided current MCA protocols.

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
OPTIONAL ALTERNATE TRANSPORT OF AN APPARENTLY INTOXICATED
PATIENT POLICY**

February 2015

Page 1 of 2

Purpose: To outline the process to be followed when EMS personnel are faced with persons who appear to be suffering from acute intoxication without any other associated medical or traumatic condition, and **wanting** to be transported to The Recovery Center (detox center), which is a program of Community Mental Health of Clinton, Eaton and Ingham Counties.

Upon identifying a person who appears intoxicated:

1. Perform a primary and secondary exam including vital signs.
2. If there are apparent injuries or any other condition which causes concern for the patient's health or welfare, the patient must be transported to a hospital by EMS. Examples:
 - a. Any condition identified during the primary or secondary exam, which would typically result in transport to the hospital.
 - b. Auditory hallucinations (hearing voices) talking to someone not present.
 - c. Delusional thinking (paranoia).
 - d. Self-harm/abusive or aggressive behavior.
3. If there are no apparent injuries or other conditions, which cause concern for the patient's health or welfare, perform an evaluation of oxygen saturation and glucose level.
4. If oxygen saturation or glucose is abnormal or there is any other suggestion of need for hospital evaluation, the patient must be transported to an appropriate hospital.
5. If assessments are within normal limits, and there is no indication of need for hospital evaluation, and a determination is made that no emergency exists, EMS may ask the patient if they would prefer to be transported to The Recovery

MCA Name: Tri County Emergency MCA
MCA Board Approval Date: May 13, 2015
MDCH Approval Date: July 24, 2015
MCA Implementation Date: September 2, 2015

Section 8-33

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
OPTIONAL ALTERNATE TRANSPORT OF AN APPARENTLY INTOXICATED
PATIENT POLICY**

February 2015

Page 2 of 2

Center. EMS must contact on-line medical control for authorization to transport to The Recovery Center.

6. If there is any confusion or question about the person's condition, the patient must be transported to the hospital.

7. Transport mode:

a. If going to The Recovery Center, the patient may be transported by law enforcement.

b. If going to the hospital, the patient will be transported by EMS.

c. If no other transportation is available, the patient may be transported to the Recovery Center via EMS.

d. If EMS is transporting to Detox Center, contact center to advise them of incoming patient using phone numbers listed below.

Main Line: 517-267-7623

On Duty Staff Cell Phone: 517-599-1839
(Staff carry cell phone on their person during overnights and weekends)

Detox Center Address:

810 W. Saginaw Street
Lansing 48915

MCA Name: Tri County Emergency MCA
MCA Board Approval Date: May 13, 2015
MDCH Approval Date: July 24, 2015
MCA Implementation Date: September 2, 2015

Section 8-33

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
ACTIVE VIOLENCE INCIDENT ENTRY**

Date: June 26, 2015

Page 1 of 2

Purpose:

The purpose of this protocol is to acknowledge the use of specialty trained and equipped EMS personnel in our Medical Control Authority working alongside with Law Enforcement during an active violence incident (AVI). EMS personnel who have trained with law enforcement are allowed to enter into the warm zones.

When responding to these types of incidents, the trained and equipped EMS personnel will respond along with a State licensed EMS unit from their Agency, licensed at an appropriate level. If requested outside of the EMS Agency's response area, an additional ambulance from the local jurisdiction shall be dispatched as well.

This protocol does not provide liability coverage as prescribed under the EMS law for tactical teams that originate and/or operate out of a **non-life support** EMS Agency, i.e. police departments, sheriff departments; SWAT teams.

Procedure:

EMS agencies that seek to utilize trained EMS personnel will ensure their personnel have the following: State of Michigan EMS licensure, a valid TCEMCA Authorization Card and training with law enforcement. It will be the agency's responsibility to provide appropriate training, equipment, and deployment of resources for response to these events, including rostering of those personnel.

All EMS personnel should have training in AVI response and treatment guidelines. The first arriving rescuers will be the one's entering with a law enforcement escort once it is declared a warm zone and reasonably safe to enter. SWAT Teams and Tactical Paramedics are unlikely to be on scene fast enough to provide care in a reasonable time frame, hence requiring every responder to be trained and familiar with AVI response.

1. Only trained and equipped EMS personnel will be allowed to enter the warm zone, in coordination with law enforcement, to provide immediate patient care. EMS personnel will wait until law enforcement is ready to escort them into the warm zone to begin patient care. The goal is to provide life-saving interventions and prevent patients from sustaining further complications by providing minimal trauma care intervention. i.e. control and treat hemorrhage, opening and protecting airway. EMS personnel will provide care only within their licensed scope of practice.
2. Any patient may be the suspect/perpetrator, therefore, check all patients for weapons before rendering care. If any weapons are found, the EMS personnel should immediately retreat to safety and advise law enforcement of the situation. If law enforcement individuals are part of the casualties, be sure to have appropriate personnel secure their weapons.

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
ACTIVE VIOLENCE INCIDENT ENTRY**

Date: June 26, 2015

Page 2 of 2

3. Non-tactical EMS personnel may enter the area once it is declared safe/clear by law enforcement, to provide further care. These EMS personnel should be escorted by law enforcement into the safe/cleared area. Appropriate protective gear should be provided to the EMS personnel.
4. Once casualties are removed from the warm zones, EMS personnel working under unified incident command will provide triage, treatment, and transport as outlined in the TCEMCA MCI protocol, section 6-20.

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
TACTICAL EMERGENCY MEDICAL SERVICE TEAM**

Date: June 1, 2015

Page 1 of 2

Tactical Emergency Medical Service Team (TEMS)

The purpose of this protocol is to allow for the use of tactical EMS paramedics, within the Tri-County Emergency Medical Control Authority, during police-related activities and training in which their presence would be advantageous.

This protocol does not provide liability coverage as prescribed under the EMS law, for tactical teams that originate and /or operate out of a **non-life support** EMS Agency, i.e. police departments, sheriff departments, SWAT teams.

Procedure:

Any ALS agency that seeks to utilize a TEMS team will provide personnel with, at a minimum, paramedic-level licensure in the State of Michigan, a valid TCEMCA Authorization Card, and training in tactical scenarios.

When responding to a tactical scene, the TEMS paramedic team will respond along with an EMS unit from their Agency, licensed at the ALS level.

If requested outside of the EMS Agency's response area, an ambulance from the local jurisdiction should be dispatched as well. In the event a patient arises out of the tactical situation, the TEMS paramedic(s) will provide a comprehensive verbal report upon transferring patient care to the transporting unit. *If the transporting unit is not ALS, or when it is deemed necessary, the TEMS paramedic(s) will accompany the patient to the hospital as to maintain or optimize patient care initiatives.*

The TEMS paramedic team will be comprised of TCEMCA authorized and State of Michigan licensed emergency medical personnel. The TEMS paramedic(s) will follow the Tri-County Emergency Medical Control Authority protocols. The TEMS paramedic(s) will have radio capabilities which allow them to reach their respective dispatch center, as well as TCEMCA hospitals for the purpose of accessing on-line medical control.

1. In tactical situations where it is not possible to contact medical control, *all post-medical control orders will become pre-medical control orders*; medical control will be contacted as soon as it becomes possible.
2. In the event of a TEMS activation, police personnel will contact their respective dispatch center and advise them of the need for TEMS personnel to respond to a situation.
3. TEMS personnel will contact the incident commander on scene for a situation report. The TEMS personnel will size-up the situation and request additional resources as needed.

MCA Name: Tri County Emergency MCA

MCA Board Approval: July 8, 2015

MDCH Approval Date: July 24, 2015

Implementation Date: September 2, 2015

Section 8-35

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
TACTICAL EMERGENCY MEDICAL SERVICE TEAM**

Date: June 1, 2015

Page 2 of 2

TCEMCA Paramedic Drug Box

1. If a TCEMCA Paramedic Drug Box is utilized by the TEMS paramedic team, they are to exchange it for the sealed drug box on the ALS transporting unit; this is to transpire upon the transfer of patient care as to ensure the operational integrity of both entities.
2. The transporting ALS unit will use the open drug box for any additional medication administration. The ALS transport unit will be responsible for documenting any and all medication administered in the electronic patient care report; including that which was administered by the TEMS paramedic team. Upon arrival at the hospital, the ALS unit will follow the standardized TCEMCA protocol for the exchange of the drug box.
3. The TEMS paramedic will complete an Electronic Patient Care Report for each patient in which they provide treatment; these reports are to be comprehensive in nature and will contain any and all interventions provided prior to the transfer of patient care to the ALS transport unit.

IV Kits/Fluids

1. The TEMS paramedic team will carry one (1) IV kit, one (1) saline lock, and (1) 1000 ml bag of Normal Saline; each of which are to be TCEMCA approved.
2. The TEMS paramedic team will replace any of its used IV supplies and fluids from the standard allotment on the ALS transporting unit. In the event the TEMS paramedic(s) accompanies the patient to the hospital, the standardized protocol for IV supply/fluid exchange will apply.
3. The ALS transporting unit will replace IV supplies and fluids in a manner consistent with TCEMCA protocol.

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
OPTIONAL EMS HEMOSTATIC DRESSING**

Date: April 2015

Page 1 of 2

ALL LEVELS

Indications:

Only to be used in severe wounds where blood loss from traumatic injury is present and when primary means, i.e. direct pressure and or tourniquet, to stop bleeding is ineffective.

Contraindications:

- Avoid contact with eye injuries.

Approved Hemostatic Dressings:

- Quick Clot, HemCon, and Celox

Procedure:

1. Open the package and remove.
2. Sterility of the dressing must be maintained.
3. Open clothing around wound. Remove excess pooled blood from wound with sterile gauze.
 - a. Preserve any clots already in the wound to aid with the clotting process.
 - b. When the source of the bleeding is located, pack the wound tightly with hemostatic dressing.
 - c. Use as much of the hemostatic dressing as needed to stop the blood flow. Remainder of the dressing can be used to cover top of wound.
4. Quickly apply pressure until the bleeding stops. Estimated time is 3-5 minutes of continuous pressure.
5. Leave hemostatic dressing in place and wrap area with kerlix or ace bandage to secure wound and dressing
6. Do not remove bandage or hemostatic dressing, elevate the injury if possible.
7. Reassess the wound and patient for any changes and document them.
8. Transport patient to appropriate trauma hospitals.
9. Make sure that empty package is attached to or sent with patient.
Removal instructions are on the package for emergency room staff.

**TRI COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY
SYSTEMS PROTOCOL
OPTIONAL EMS HEMOSTATIC DRESSING**

Date: April 2015

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Key Points

- Reassess your patient for any changes that may occur and document for report.
- Document the time and location where the hemostatic dressing was applied.
- Avoid leaving hemostatic dressing in sunlight for extended periods of time.
- Quick Clot is for external use only. **DO NOT** use for vaginal bleeding
- Quick Clot is **NOT** to be used in eye injuries.
- Contact receiving hospital with the patient information including the status of the patient and wound.

MCA Name: Tri County Emergency MCA
MCA Board Approval Date: May 13, 2015
MDCH Approval Date: July 24, 2015
MCA Implementation Date: September 2, 2015

Section 8-36

Tri-County Emergency Medical Control Authority
Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

Revised Date:

Section 8-37

PURPOSE:

To establish a system to exchange expiring or used medication kits, medication bags, medication boxes and to conduct a bi-annual account of all medications provided to EMS Agencies authorized by TCEMCA. A Pharmacy Accountability Inventory will occur in June and December each year. This inventory includes pharmacies, and agencies authorized by TCEMCA that carry or stock medications for use in TCEMCA. Inventory will include medication kits, medication bags, and medication boxes. The medications utilized in TCEMCA are the property of the MCA participating hospitals, and all bags or boxes are property of TCEMCA.

Bi-annual Pharmacy Accountability Inventory is mandatory for all agencies authorized by TCEMCA that carry medications. Non-Compliance of the bi-annual Pharmacy Accountability Inventory or carrying/using expired medications may result in the termination of the agency's MCA privileges (ability to provide care within TCEMCA).

First Offense: A letter of non-compliance will be sent to the Agency and placed in the agency file at TCEMCA.

Second Offense: If non-compliance continues the Agency will be requested to appear before the Professional Standards Review Organization (PSRO) Committee to review the Agency's non-compliance status with this protocol. This will follow all applicable protocols concerning PSRO and any actions taken.

Medication kits, medication bags, and medication boxes shall be signed out by EMS personnel at the pharmacy. Each agency is responsible for the medication(s) they sign out, carry and utilize in TCEMCA.

Agencies shall ensure they never carry or use expired medications.

Tri-County Emergency Medical Control Authority
Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

Revised Date:

Section 8-37

PROCEDURE: Used medication kits, medication bags, and medication boxes

Medication Kits

1. Complete the exchange paperwork inside each kit.
2. Bring the completed paperwork to the pharmacy, preferably the pharmacy at the hospital the patient was transported to.
3. Sign out the new medication kit on pharmacy provided form.

Medication Bags

1. Complete the exchange paperwork inside each medication bag.
2. Bring the medication bag with any unused medications, and the completed paperwork to the pharmacy. Preferably this will be the pharmacy at the hospital the patient was transported to.
3. Sign out a new, sealed, medication bag on pharmacy provided form.

Medication Boxes

1. Exchange with the hospital pharmacy that the patient was transported to.
2. Inventory medication box prior to exchange.
3. Place copy of the patient EPCR or TCEMCA Paramedic Drug Box Exchange Form inside the used medication box.
4. Seal medication box with red tag.
5. Sign out a new, green tagged, medication box on pharmacy provided form.

Narcotic Box inside Medication Box

1. If not used, it remains green tagged in bottom of medication box.
2. If used, inventory the narcotic box, seal with red tag and place back in bottom of the medication box that will also be red tagged for exchange.

Tri-County Emergency Medical Control Authority
Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

Revised Date:

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PROCEDURE: Expiring medication kits, medication bags, and/or medication boxes

A medication kit, medication bag or medication box may be exchanged up to 3 months prior to expiration at the agencies designated pharmacy Monday-Friday. The exchange paper included inside each medication kit and medication bag shall be used when exchanging expiring kits or bags.

Agencies will note "EXPIRING MEDICATION" for the patient's name on the exchange paper and place inside the medication kit or medication bag being exchanged.

Medication boxes being exchanged due to expiring medication will have a paper placed inside stating "EXPIRING MEDICATION," the agency name, and paramedic exchanging name, as well the expiring medication box will be red tagged.

All new medication kits, medication bags, and medication boxes shall be signed out from the pharmacy when exchanging on pharmacy provided form.

PROCEDURE: Bi-Annual Pharmacy Accountability Inventory

Pharmacy Accountability Inventory is a designated Wednesday in June and December at which time all medication kits, medication bags, and medication boxes are accounted for, and if needed, exchanged with our pharmacies for any updates or changes as advised by TCEMCA.

Pharmacy Accountability Inventory forms utilized are located at [TCEMCA.ORG](https://www.tcemca.org) website. The forms are to be completed and emailed by agencies to TCEMCA between 8-10am the morning of Pharmacy Accountability Inventory day. For proper processing, the agency name must be indicated on all Pharmacy Accountability Inventory forms and emailed to: pharmacy@TCEMCA.ORG

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Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

Revised Date:

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MFR Agencies -

Saturday to Saturday before Pharmacy Accountability Inventory Wednesday, record required information on the TCEMCA Pharmacy Accountability Inventory form(s). Email completed form(s) to TCEMCA office for each type of medication kit your agency has.

If advised to bring all medication kits in for Pharmacy Accountability Inventory, bring the medication kit(s) in for exchange with your designated pharmacy at your agencies designated time or as close as possible to the time. The medication kit(s) are exchanged, un-opened. If the agency has multiple medication kits, try exchanging them in smaller groups to assist the pharmacies with being able to exchange in a timely manner.

BLS Agencies -

Saturday to Saturday before Pharmacy Accountability Inventory Wednesday, record required information on the TCEMCA Pharmacy Accountability Inventory form(s). Email completed form(s) to TCEMCA office for each type of medication kit or medication bag the agency has.

If advised to bring all medication kits or medication bags in for Pharmacy Accountability Inventory, bring the medication kit(s) and/or the medication bag(s) in for exchange with your designated pharmacy at your agencies designated time or as close as possible to the time. The medication kit(s) and/or medication bag(s) are to be exchanged un-opened. If the agency has multiple medication kits or medication bags, try exchanging them in smaller groups to assist the pharmacies with being able to exchange in a timely manner.

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Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

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LALS/ALS Agencies - On Pharmacy Accountability Inventory Wednesday, record required information on the TCEMCA Pharmacy Accountability Inventory form(s). Email completed form(s) to TCEMCA office for each type of medication kit, medication bag, and/or medication box your agency has.

If advised to bring all medication kits, medication bags and/or medication boxes in for Pharmacy Accountability Inventory, bring the medication kit(s), medication bag(s), and/or medication box(s) in for exchange with your designated pharmacy at your agencies designated time or as close as possible to the time. The medication kit(s), medication bag(s), and/or medication box(s) are to be exchanged un-opened. If the agency has multiple medication kits, bags, or boxes, try exchanging them in smaller groups to assist the pharmacies with being able to exchange in a timely manner.

NOTE: Do not wait for a Pharmacy Accountability Inventory Wednesday to exchange any expiring medication kit, medication bag or medication box. It is the responsibility of the agency to ensure they are not carrying or utilizing expired medications.

AGENCIES WITH MEDICATIONS ON RESERVE VEHICLES OR STORED SECURELY OFF VEHICLES:

The medication kit, medication bag or medication box will be rotated with frontline licensed response vehicles every thirty (30) days to ensure use in the system. It is the responsibility of the agency to ensure they are not holding, carrying, or utilizing expired medications.

Tri-County Emergency Medical Control Authority
Systems Protocols
Pharmacy Accountability



Initial Date: 3/10/2025

Revised Date:

Section 8-37

PROCEDURE: Pharmacy Accountability Inventory process for Hospital Pharmacies

Pharmacies will report inventory of medication bags and medication boxes on Pharmacy Accountability Inventory Wednesday between 8-10am to TCEMCA office.

When there is a need to change/alter/modify any medication kits, medication bags or medication boxes all medication kits, medication bags, and/or medication boxes will be required to be exchanged with an agency's designated pharmacy. At that time, the change/alteration/modification will occur, and labels will be updated on or within the medication kits, medication bags or medication boxes. The outside of the medication bag or medication box may be temporarily marked to indicate the change has been made by the pharmacy.

Tri-County Emergency Medical Control Authority
Systems Protocols
APPLICATION TO PROVIDE SERVICE/UPGRADE LEVEL OF SERVICE
IN TRI-COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY



Initial Date: 6/1/2017

Revised Date:

Section: 8-38

Agencies desiring to provide emergency medical services in Clinton, Eaton, or Ingham Counties or wishing to upgrade their existing licensure level must satisfactorily complete the application process as outlined below. Applying agency must meet all licensing requirements as set forth by the State of Michigan, including the State required equipment/supplies. The applying Agency must also meet all additional requirements listed in TCEMCA protocol.

1. Submit letter of application indication the specific geographic area to be served, the desired level of licensure, the proposed station(s) location, type of service (transporting or non-transporting), and the number of ambulances being licensed with their licensure level.
2. Submit documents related to the official types of legal organization of the service, stating whether it is an individual proprietorship, partnership, corporation, or subsidiary of any other corporation or unit of government.
3. Submit your plan to communicate with the 9-1-1 Dispatch Centers. If dispatching will not be occurring through the 9-1-1 Dispatch Centers, include documentation of agencies dispatching method, including: dispatch training requirements, records, pre-arrival instructions and computer aided dispatch capabilities.
4. Submit proof of electronic report capabilities, and vendor of choice.
5. Submit a personnel roster which included the EMS personnel's license number and licensure level. Within the roster, indicate names of Instructor Coordinators for agency.
6. EMS Personnel must meet requirements outlined in the "Responsibilities of Participants Protocol" Responsibilities of EMS providers, Section 6-34. After application approval, prior to operation in the MCA, personnel must complete the TCEMCA authorization process.
7. For any proposed transporting or non-transporting service at the Advanced Life Support, Limited Advanced or Basic Life support service, describe the clinical need for the new service.
8. If your agency is currently licensed in the State of Michigan, provide a complete list of Medical Control Authorities, which you have provided service in the last five years, and permission to contact them for references.
9. Include any other factors you wish the TCEMCA Board to consider when reviewing this application.

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval: 11/13/2024

MCA Implementation Date: 02/03/2025

BEPESCO Approval: 01/24/2025

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APPLICATION TO PROVIDE SERVICE/UPGRADE LEVEL OF SERVICE
IN TRI-COUNTY EMERGENCY MEDICAL CONTROL AUTHORITY



Initial Date: 6/1/2017

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Section: 8-38

10. Include the Agency's completed State application both Part 1 and Part 2 of the application, and the TCEMCA application form (page 4 of this protocol).
11. If all the conditions stated above in items one through ten are met, the application will be accepted.

The application packet must be presented in the order stated above. The applying agency must submit two copies of the application for review by the Tri County Emergency Medical Control Authority (TCEMCA) Board of Directors. The completed application must be submitted no later than two weeks prior to the meeting date of the Tri County Emergency Medical Control Board. Meetings are held on the second Wednesday of January, March, May, July, September and November.

The Medical Control Board will review the completed application and may direct a reference review and investigation. The Board may withhold support of the application based upon adverse findings in the investigations process. The Board or designated representative will advise the applicant of the Board's final determination.

All new agencies will be placed on probation from the first day of operation for a period of 1-year. During probation, in 90-day intervals, the agency will meet with the Medical Director and Manager of Operations. This meeting will serve as a progress report, and if necessary include a performance improvement plan. A report of this meeting will be presented by the Medical Director or Manager of Operations at the TCEMCA Board Meeting.

APPLICATION FEE:

A non-refundable fee must accompany this application.

New Agency Fee Schedule:

\$2,500.00 for Advanced Life Support

\$1,500.00 for Limited Advanced Life Support

\$1,000.00 for Basic Life Support

\$500.00 for Medical First Responders

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval: 11/13/2024

MCA Implementation Date: 02/03/2025

BEPESCO Approval: 01/24/2025

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Initial Date: 6/1/2017

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Agency Upgrade Fee Schedule:

\$1,250.00 for Advanced Life Support

\$750.00 for Limited Advanced Life Support

\$500.00 for Basic Life Support

The application fee must be in the form of a certified check made payable to:

Tri-County Emergency Medical Control Authority

Mail the completed application packet and check to the address below:

Tri County Emergency Medical Control Authority
2127 University Park Dr., Suite 370
Okemos, MI 48864

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NEW SERVICE / AGENCY UPGRADE APPLICATION FORM

DATE _____

NAME OF SERVICE _____

MAILING ADDRESS _____

CONTACT PERSON _____

PHONE NUMBER _____

FAX NUMBER _____

E-MAIL _____

SIGNATURE OF AGENCY CHIEF EXECUTIVE OFFICER

The above signature expresses a willingness to comply with all TCEMCA protocols, procedures, directives, and provides a release to obtain reference information. Misrepresentation of any item on the application will disqualify the service from consideration for a period of six-months.

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval: 11/13/2024

MCA Implementation Date: 02/03/2025

BEPESCO Approval: 01/24/2025

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Systems Protocols
FIRST RESPONDER EMOTIONAL SUPPORT



Initial Date: 07/25/2024

Revised Date: 01/24/2025

Section 8-39

Emergency service workers, by virtue of their own profession, are faced with certain events that have the potential to create a significant stress reaction. These events have been termed "critical incidents". A critical incident is any situation that causes unusually strong emotions and has the potential to overwhelm one's ability to cope.

PURPOSE: This is an informational protocol that is for resource purposes and is voluntary.

CAPTIAL AREA PEER SUPPORT HELPLINE – 989-372-6664 (call or text)
IMMEDIATE ASSISTANCE

The Capital Area Peer Support (CAPS) Helpline is staffed by trained emergency services personnel. It exists for all first responders in the Capital Region of Michigan, and their family members, to speak with a peer about any concerns they may have. Peers will provide support and referrals as needed.

STATE OF MICHIGAN ROUTED SUICIDE & CRISIS LIFELINE – DIAL 988

The 988 Suicide and Crisis Lifeline, formally known as the National Suicide Prevention Lifeline (NSPL), is a 24/7 toll-free nationwide hotline, made up of a network of independently operated and funded local call centers (200+) across the country where compassionate care and accessible support is available.

Lifeline call centers are free and confidential.

FRONTLINE STRONG TOGETHER (FST5) – 1-833-34-STRONG

COMMUNITY MENTAL HEALTH AUTHORITY OF CLINTON, EATON, and INGHAM COUNTIES - 517-346-8460 or 1-800-372-8460 – Crisis Hotline

LISTENING EAR CRISIS CENTER – 517-337-1717

DEFINITIONS

Critical incident stress - A strong emotional, cognitive, or physical reaction that has the potential to interfere with daily life, including physical and emotional illness, loss of interest in the job, personality changes, marital discord, and loss of ability to function.

Critical Incident Stress Debriefing (CISD) - A standardized approach using a group format to provide education, an atmosphere and opportunity for emotional release

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FIRST RESPONDER EMOTIONAL SUPPORT



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Revised Date: 01/24/2025

Section 8-39

through discussion, and support for members who are involved in emergency incidents under conditions of extreme stress. CISD is not a diagnostic or treatment process like that provided in counseling sessions by a mental health professional. Instead, it is a service that provides education and support.

Critical Incident Stress Management (CISM) - Critical Incident Stress Management is a method of helping first responders and others who have been involved in critical incidents that leave them emotionally and /or physically affected by those incidents. CISM is a process that enables peers to help their peers understand problems that might occur after an event. The process also helps people prepare to continue to perform their services or, in some cases, return to a normal lifestyle.

Critical Incident Stress Management team member - A member of a debriefing team that has been trained by the Michigan Crisis Response Association Network (MCL 333.20981), following the ICISF model.

Peer Support - Emotional assistance provided by a trained individual or group of first responders.

CISD PROGRAMS

A CISD program should include pre-incident, on-scene, and post-incident activities, including education, diffusion of emotional reactions, and debriefing. The purpose of the program is to minimize the impact of stress on first responders following major incidents.

Ideally, CISD/CISM should incorporate the services of both peer support personnel and trained professionals, such as physicians, psychologists, or counselors.

The following are examples of incidents that may initiate a CISD response:

- Major disaster or mass casualty incidents
- Severe injury, death, or suicide of an emergency service provider
- Severe injury or death of a civilian resulting from emergency service operations.
- Death of a child or similar incident involving a profound emotional response
- Any incident that attracts unusually heavy media attention
- Loss of life following an unusual or extremely prolonged expenditure of emotional and physical energy by emergency services personnel

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- Any unusual incident that produces an extreme, immediate, or delayed emotional response
- Cumulative trauma from multiple incidents

A CISD/CISM Team can provide debriefing services within 48-72 hours following a critical incident. In addition, the teams can provide on-scene support and defusing during a major incident. These teams may also provide educational seminars on stress as an on-going educational program.

Any time it has been determined that a critical incident has occurred, or that responders are requesting assistance, a CISD/CISM process should be initiated. The request may be made either directly to peer support personnel, through the agencies EAP, regional CISM networks or state CISM networks.

Depending on the type and magnitude of the incident and services that may be needed, the CISD may be activated either during or immediately after a critical incident.

All responders are responsible for recognizing incidents that may need a CISD. Once an incident has been identified as a critical incident, a CISD should be initiated as soon as practicable.

Debriefing may be conducted anywhere there is ample space, privacy, and freedom from distractions. Consideration should be given to including responders from other agencies who were involved in the incident including but not limited to communications personnel, law enforcement officers, paramedics or ambulance personnel, and hospital personnel.

Any first responder is encouraged to take advantage of peer support services, or seek professional help as needed.

DEBRIEFING

The form of CISD utilized should depend upon how early the intervention is activated and the nature of the incident. The use of one format does not preclude the use of others for the same critical incident.

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Common formats for CISD include:

- (a) On-scene debriefing: Peer support personnel or mental health professionals respond to the scene and are advisers to watch for the development of acute reactions. They may offer encouragement and support, check on the well-being of personnel, and allow for individual discussion of feelings and reactions.
- (b) Initial defusing: This usually takes place within a few hours of the incident and is generally facilitated by peer support personnel. It is an informal process encouraging open and free expression of feelings without a critique of the incident. The purpose is to stabilize involved members so they can go home or return to service.
- (c) Formal debriefing: Debriefing led by a CISD/CISM program mental health professional and peer support personnel that usually takes place 24 to 48 hours after the conclusion of the incident. Members involved in the critical incident are given the opportunity for free expression of feelings. This expression should be met with acceptance, support, and understanding.
- (d) Follow-up debriefing: If deemed necessary, follow-up may be facilitated by the CISD/CISM mental health professional and/or peer support personnel several weeks or months after a critical incident. The main purpose is to resolve any issues or problems that may not initially been resolved. The follow-up debriefing may include the entire group or a portion of those originally involved.

Regardless of the type of debriefing, CISD is not a critique of agency operations at the incident. The CISD provides a setting in which members can discuss their feelings and reactions to reduce the stress resulting from exposure to critical incidents. Performance issues should not be discussed during the debriefing.

No one has rank during a debriefing process. Everyone is equal.

Following any intervention, should members feel a need for additional assistance, contact peer support personnel or a CISD/CISM team member to obtain information regarding a referral.

Only those involved in the incident and CISD/CISM team members should be present. Members directly exposed to the traumatic aspects of an incident are strongly encouraged to participate in CISD/CISM.

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CONFIDENTIALITY

TCEMCA considers all CISM interventions, regardless of type, as strictly confidential. Notes, other than those specifically identified in this protocol, are prohibited. No audio or video recording may be made without the express consent of all participants (MCL 333.20982). Reference State of Michigan Senate Bill No. 444, Part 209A Critical Incident Stress Management Services, Section 20982 regarding communications with a CISM team as being confidential and private.

The only exceptions to confidentiality should be when:

- (a) There is reasonable evidence to assume a risk of harm to the member or to others. If the risk is to another person, that person is identifiable, and there are means to contact the person.
- (b) Participants divulge information that falls under any applicable state mandatory reporting duties or enacted law, bill, or statute.

ADDITIONAL RESOURCES

[ResponderStrong – Improving mental health supports for emergency responders and their families](#)

[FST5 is here to help first responders - Frontline Strong Together](#)

[CEI Community Resources 23.pdf \(msu.edu\)](#)

State of Michigan 98th Legislature of 2016 Senate Bill No. 444

State of Michigan 100th Legislature of 2020 House Bill No. 4862

Agencies and Departments are encouraged to have Emergency Action Plans (EAP) and services for all employees to assist with their mental wellbeing.

Tri-County Emergency Medical Control Authority
Systems Protocols
Optional Use of Basic Life Support Ambulances for 911 Response



Initial Date: 2/27/2025

Revised Date:

Section 8-40

PURPOSE:

This optional protocol does not change the requirements set by the agency's license from the state. Agencies must first complete, sign, and submit to TCEMCA the Optional use of BLS Ambulances for 911 response attestation letter. TCEMCA will maintain a roster of agencies that are approved to participate in this protocol.

To allow approved TCEMCA agencies the ability to respond Basic Life Support (BLS) Ambulances for medical dispatched 911 priority 3 & 4 requests for service within TCEMCA. This protocol will continue to require an Advanced Life Support (ALS) response to Priority 1 and 2 EMS incidents.

Furthermore, in the event that an ALS ambulance is not readily available (including via in- or out-of-county mutual aid), it will be permissible to respond a BLS ambulance. An ALS intercept shall be considered for patients who are in need of ALS-level care and where the transport time to the hospital is longer than the time to ALS intercept. However, for time-critical conditions in which ALS care is not likely to change outcomes and would likely result in delayed access to definitive care (e.g., stroke), ALS intercept may not be appropriate.

TCEMCA EMS AGENCY REQUIREMENTS:

Provide a signed BLS Ambulance for 911 response attestation letter to TCEMCA prior to implementing this protocol. Fulfill all requirements indicated in this protocol including all CQI requirements. An agency will be excluded from this protocol in the event they are unable to or fail to maintain the requirements set forth in this protocol.

Agencies not utilizing this optional protocol will always respond at the level of the agency state license regardless of the priority of the patient given by the public safety telecommunicator.

PUBLIC SAFETY ANSWERING POINT MANDATORY REQUIREMENTS:

TCEMCA has approved using Emergency Medical Dispatcher (EMD) medical protocols through the International Academies of Emergency Dispatch (IAED). All Public Safety Answering Points (PSAP) within TCEMCA area that processes/dispatch medical calls must use the latest approved version of the medical priority dispatch system from IAED. Public Safety Telecommunicators must be trained, certified, and maintain IAED EMD certification to process/dispatch medical calls. An IAED-Certified EMD telecommunicator shall directly supervise a trainee telecommunicator.

MCA Name: Tri-County Emergency Medical Control Authority

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MCA Board Approval: 03/12/2025

MCA Implementation Date: 09/2/2025

MDHHS Approval: 06/27/2025

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Systems Protocols
Optional Use of Basic Life Support Ambulances for 911 Response



Initial Date: 2/27/2025

Revised Date:

Section 8-40

PSAP CALL PROCESSING:

EMS priority indicators, priority 1, 2, 3, or 4 will be used by the EMD telecommunicator when dispatching EMS calls for service. EMS priority indicators shall be determined from the determinate descriptors within the IAED EMD program, without alteration, unless approved by the TCEMCA medical director. The determinate code is assigned based on the answers provided to the EMD telecommunicator during call processing using the approved IAED protocols. The crossover from IAED determinate codes to EMS priority indicators will be as follows:

- Alpha (A) and Bravo (B) IAED determinate codes will be referred to as Priority 3 or 4 for EMS dispatching. Priority 3 & 4 requests may receive a Basic Life Support (BLS) response.
- Charlie (C), Delta (D), Echo (E) IAED determinate codes will be referred as Priority 1 & 2 for EMS dispatching. Priority 1 & 2 requests will receive an Advanced Life Support (ALS) response.

If an EMD telecommunicator is unable to provide a priority level for a patient, the EMS agency shall respond at the level of the agency's state license.

EMS AGENCY & EMD TELECOMMUNICATOR PROCEDURES:

- I. Use of BLS Ambulance as Sole Ambulance Response to Priority 3 & 4 request for service. (Determinate Code Alpha or Bravo)**
 - A. It is permissible to dispatch a BLS ambulance to Priority 3 & 4 requests for service. (Determinate Code Alpha or Bravo) - BLS Response.
 1. An ALS ambulance, if available, will be dispatched after initial BLS dispatch if the PSAP receives additional information that identifies a Priority 1 or 2 patient, or as requested by a responding EMS unit.
 2. An ALS ambulance shall be requested by BLS or MFR personnel on scene if patient(s) found to need ALS interventions.
 - B. ALS will be requested by BLS when the patient fails to meet the criteria for BLS transport as noted in TCEMCA protocol **8-7 – ALS to BLS Transfer of Care** and below.
 1. Patient's airway is patent, maintained without assistance or adjuncts.
 2. Patient is hemodynamically stable with medical complaints or injuries that would be cared for at the BLS level.

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Optional Use of Basic Life Support Ambulances for 911 Response



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3. No imminent changes are anticipated in the patient's present condition.
4. Patient presents at baseline mentation and GCS or if unknown, GCS $\geq$ 14.
5. Patient does not require cardiac monitoring, or pain management (e.g., chest pain, dyspnea, syncope, pain)
- **Examples of patients appropriate for BLS transport.**
- Minor trauma without concerning mechanism of injury or special trauma considerations (e.g., pregnant, blood thinners), and not needing ALS medications (e.g., analgesia)
- Opioid overdose with successful reversal with narcotic antagonist medication and with stable vital signs and normal level of consciousness.
- Suspected alcohol intoxication with stable vital signs, alert, normal blood glucose, alert, no recent seizure, no evidence of trauma, no concern for co-toxins
- Behavioral health condition with patient with stable vital signs, alert, and fully cooperative who have not required (or anticipated to need) physical or pharmacologic restraint.
- Patient found hypoglycemic, has received ALS care resulting in normal level of consciousness, and not taking oral or long-acting anti-hyperglycemic medications.
- Patients who have received analgesia (e.g., fentanyl IV/IN) and otherwise meet criteria.
- Note: Patients who meet above criteria who have a saline lock in place or IV fluid infusing at TKO who otherwise meet the above criteria may be transported by BLS

II. Use of BLS Ambulance, when ALS is not readily available, for Response to a Priority 1 & 2 request for service (determinate code Charlie, Delta, Echo).

- A. An ALS response is the standard for all priority 1 & 2 EMS requests.
- B. If **NO ALS unit** is available to respond (including in- and out-of- county mutual aid) to an ALS incident, priority 1 & 2 request, a BLS ambulance shall be used to respond to the incident.
- C. BLS Responsibilities for sole response to ALS call
 1. Provide BLS care consistent with TCEMCA protocols with an EMT providing care in patient compartment.
 2. Determine if an ALS intercept is indicated considering patient acuity and transport time to the hospital. ALS intercept should only be considered if ALS arrival is faster than ED delivery by BLS unit.

Tri-County Emergency Medical Control Authority
Systems Protocols
Optional Use of Basic Life Support Ambulances for 911 Response



Initial Date: 2/27/2025

Revised Date:

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3. In the event of an unanticipated medical emergency warranting ALS care, request an ALS intercept or continue to destination hospital alerting them as to change in condition (whichever provides most timely access to ALS care) NOTE: Cardiac Arrests occurring while in transport to the hospital should be managed in a stationary ambulance supported by closest ALS unit.
4. Provide verbal and/or written (may use TCEMCA EMS Field Notes) hand-off to hospital personnel.
5. Document EMS encounter (including ALS component if any) per protocol in EPCR.

*If ALS is on scene, and patient does not meet criteria for ALS interventions, care may transfer from the ALS unit to a BLS unit following protocol **8-7 – ALS to BLS Transfer of Care**.*

III. Continuous Quality Improvement (CQI)

- A. All BLS responses occurring under this protocol shall be reviewed by the EMS agency and reported bi-weekly to TCEMCA. A BLS911 CQI form will be utilized to report these responses to TCEMCA, through email at:
BLS911@TCEMCA.ORG
- B. All BLS responses to Priority 1 or 2 incident without ALS or to a Priority 3 & 4 incident resulting in a need for ALS care, and/or emergency transport to the hospital will be considered to be a sentinel event and must be reported to TCEMCA by the agency (along with EPCR uploaded to MIEMIS) within 24 hours of the incident. Reporting to TCEMCA shall utilize the BLS911 CQI form and email through the BLS911@TCEMCA.ORG email.

Protocol Reference: Kalamazoo County Medical Control Authority (KCMCA) – 8.16a Use of Basic Life Support Ambulances for 911 Responses,
Version: 07/20/2023, MDHHS Approval: 07/20/2023

Initial Date: 10/25/2017

Revised Date: 03/03/2025

Section 9-1

Medication Administration

Information:

EMS providers preparing to administer medications in the out of hospital setting should review and/or recite the "6 Rights" prior to administering any medication to a patient. While all 6 elements are important, In the out of hospital setting, special attention should be paid to the right medication, right dose, and right route - as these are frequently the areas of error in the EMS environment. In addition, EMS providers should ensure the patient is informed as to what medications they are receiving and afford an opportunity for the patient to refuse. Lastly, documentation is essential so that medications administered in the out of hospital setting become part of the patient's clinical medical record. By following the "6 Rights" of medication administration, EMS providers will significantly decrease the potential and number of errors associated with medication administration.

Definitions:

- I. Medication: Any pharmacological intervention used to treat, prevent, or reduce signs and symptoms of diseases, disorders, and/or traumatic injuries.
- II. Medication administration routes include the following: Intramuscular, Intravenous, Intraosseous, Oral, Buccal, Rectal, Inhaled, and Subcutaneous.

Procedure:

- I. Prior to the administration of any medication ensure the following are reviewed and/or verbalized by at least two providers – if available (checked, and double checked):
 - A. 6 Rights of Medication Administration –
 1. Right Patient
 2. Right Dose
 3. Right Medication (including indication)
 4. Right Route
 5. Right Time
 6. Right Documentation (including response)
- II. Calculating medications when given a dosage range and a per kg dose:
 - A. Calculate weight in kilos and multiply by the prescribed dosage (e.g. - mg/kg)
 - B. The resultant dose should be less than the maximum single dose.
 1. In adults, for ease of administration, doses may be rounded to the nearest whole number within the range for those calculated doses at or above 1 dosage unit, or to the nearest tenth for those below 1 dosage unit (examples: 1.2 mg rounded to 1 mg, and 0.26mg rounded to 0.3mg). That calculated and rounded dose may be given and repeated in timed intervals, as indicated for that medication, to the control of symptoms or maximum stated cumulative dose if symptom control is not previously achieved.
 2. For pediatric patients, utilize MI-MEDIC and a length-based tape for all medication calculations.

Initial Date: 10/25/2017

Revised Date: 03/03/2025

Section 9-1

C. Pediatric patients will never be given a single or total dose that exceeds the maximum single or total adult dose.

III. Following administration of any medication

- A. Document all pertinent aspects of the medication administration including but not limited to medication name, dose, route, and time in an electronic patient care report.
- B. Obtain signature of prescriber (medical control physician or other qualified designee) per local medical control authority policy.



Intranasal Medication Administration:

Intranasal medication administration using an FDA approved and MCA authorized atomizing device as specified in applicable patient care protocols may be allowed for MFR per MCA selection.

MCA Approval for intranasal medication administration for MFR

☐ Yes
☐ No

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

Procedure:

1. Select desired medication and determine dose per applicable protocol.).
2. Draw up appropriate dose (volume) of medication plus an additional 0.1 mL to account for device dead space.
3. Attach atomizing device to syringe.
4. Use one hand to support back of patient's head as needed.
5. Place tip of atomizing device snugly against nostril aiming slightly upward and outward. Administration angle should be approximately 45°.
6. Rapidly administer one half of the dose of medication, briskly pushing plunger.
7. Repeat with other nostril delivering the remaining volume of medication.
8. Use the highest concentration available for the medication.
9. Note: Maximal dose per nostril is 1 mL



Nebulized Medication Administration

Nebulized medication administration using an FDA approved and MCA authorized atomizing device as specified in applicable patient care protocols may be allowed for EMT per MCA selection.

Initial Date: 10/25/2017

Revised Date: 03/03/2025

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MCA Approval for nebulized medication administration by EMT

- ☐ Yes
☐ No

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

Procedure:

1. Obtain vital signs and auscultate lung sounds.
2. Select desired medication and determine dose per applicable protocol.).
3. Place the appropriate volume of medication in the lower half of the nebulizer unit. Then screw the upper half of the unit in place.
4. Attach the nebulizer to the base of the T piece. Then attach the mouthpiece to the T piece or connect neb chamber to NRB mask.
5. Attach one end of the oxygen tubing to the base of the nebulizer and the other end of the oxygen tubing to the oxygen source.
6. Set the **oxygen** liter flow at 6 L/min.
7. Instruct the patient to breathe normally through the mouthpiece, taking a deep inspiration every 4 or 5 breaths.
8. Continue the treatment until all the medication has been delivered through the nebulizer. You may need to gently tap the reservoir once or twice during the treatment to re-disperse the medication.
9. Obtain and record another complete set of vital signs and lung sounds after completion of the treatment.



Pediatric Considerations

1. Infants and small children may not be able to use adult mouthpiece and may need to use blow-by or pediatric mask

NOTES:

MCL 333.17754 Section 1(C)) An electronic signature or other identifier that specifically identifies and authenticates the prescriber or his or her agent.

Medication Substitution

Purpose:

This protocol allows for MCA to substitute medications during a time of shortage without having to enact emergency protocols within the MCA. This protocol does not replace or override any portion of the **Medication Shortage Procedure**. All procedures within that procedure must still be followed in regards to substitutions in concentration or medication.

Indications:

None of the medication options indicated in the MCA approved protocol are available.

Procedure:

1. Follow **Medication Shortage Procedure**.
2. Alternate concentrations are listed within this protocol for reference; these do not require a protocol change and are outlined in the **Medication Shortage Procedure**.
3. Notification and education of providers within the MCA should be done as soon as the substitution is known.
 - a. It is the responsibility of the MCA to distribute information on the shortages and substitutions to agencies for distribution to providers.
 - b. If a substitution is imminent, it is acceptable for an MCA to distribute information prior to the medication being substituted.
4. The MCA should notify the Division of EMS and Trauma if a substitution is suspected to last more than 60 days so that a more permanent protocol solution can be enacted.
5. All uses of substitute medications will be reviewed by PSRO for appropriateness.

Current Medication	Substitution
Amiodarone	Procainamide
Calcium Chloride	Calcium Gluconate
Diazepam	Lorazepam
Diphenhydramine	Famotidine Ranitidine Hydroxyzine
Fentanyl	Hydromorphone
Lidocaine	Procainamide
Midazolam	Lorazepam
Morphine	Hydromorphone
Ondansetron	Promethazine Compazine

Medication Shortage

A. Definitions:

1. **Alternate Concentration** – same medication, different concentration, while volume may change, the delivered dose remains unchanged, dilution may be required (Epinephrine 1: 10,000 replaced using Epi 1: 1,000 with a 10mL diluent)
2. **Alternate Supplied Volume** – same medication, same concentration, standard volume is unavailable, the delivered dose and volume remain the same (Epi 1: 1,000, typically supplied in a 1mL vial replaced with Epi 1: 1,000 in a 10mL multi-dose vial due to shortage of the smaller vials)
3. **Alternate Supply/Type** – same medication, standard supply type is unavailable (preloads vs. vials), dosing remains unchanged (diphenhydramine 50mg/5mL preload is unavailable, replaced with diphenhydramine 50mg/5mL in a vial)
4. **Alternate Form** – same medication, different route such that identical dosing does not yield the same systemic concentration or effect (ondansetron 4mg vial unavailable, replaced with ondansetron 4mg ODT, option to repeat x 1 added to allow approximation of equivalent dosing)
5. **Alternate Medications** – medication other than the standard approved medication which accomplishes an acceptably similar effect as the medication it replaces (fentanyl 100mcg approved to replace morphine 10mg, dosing adjusted to obtain therapeutic equivalency)
6. **Missing Medication** – standard medication which is unavailable (amyl nitrite not available, acceptable alternative of Cyanokit is excessive in cost and size: alternate means to access treatment established – MEDDRUN)
7. **Outsourced medications** – Repackaged or manufactured by a 503 B compounding pharmacy in the same concentration and volume must have at least a 90-day expiration date.

B. Criteria:

1. Participating pharmacies be it at the individual MCA or at a wider regional level, shall establish and maintain a listing of the standard medications and supplies contained in drug bags or boxes supplied to life support agencies for the purposes of treating patients.
2. In the event of a medication shortages and the need for alternative dosing or medication substitutions, each MCA shall develop and enact a medication cross-check procedure, to which EMS personnel will be held accountable as a means to avoid medication errors
3. The participating pharmacy(ies), with MCA approval, shall enact policies/procedures which guide each of the following:
 - A. Recognition of medication shortages and a means to report them to system participants.
 - B. Pharmacy involvement in the investigation and designation of acceptable alternatives when shortages are identified
 - C. An organized process by which participant pharmacies will enact the replacement or substitution

- D. A documented means of visually identifying when an alternative medication or dosing has been placed into an EMS drug bag or box, or when a medication is missing and there is no substitute.
- E. Additional equipment, which is needed to deliver the medication, must be included with the alternate dose.
- F. A method for dissemination of information related to changes made to the participating pharmacy drug bags or boxes with a means of accounting for receipt of the notifications at the agency/pharmacy levels

C. Selection of Alternative Medications:

- 1. Alternative concentrations, alternative supply/type and alternative supplied volume may be approved at the MCA/participating pharmacy level without a change to protocol provided that the standard and approved alternate medications are documented in the required lists, by effective date or date range.
- 2. When more than one medication is available for MCA selection on a protocol and the selected medication is unavailable, the MCA is to submit the protocol with the other medication(s) selected.
- 3. Alternate form and alternate medications may be enacted as an emergency protocol according to statute and state approval, in the event of imminent shortage.
- 4. Non-standard medications, or those with no precedence of EMS use within Michigan must be submitted as new protocol submissions. The state may allow for expedited review in the event of imminent shortage of the medication being replaced.
- 5. If a missing medication will not be replaced, or an acceptable alternative is not found, a protocol or process should be developed or presented which addresses the potential inability to meet the existing protocol established standard of care.

D. MCA Responsibility:

- 1. Notify EMS Agencies of the utilization of alternate dosing, alternate medications or missing medications due to shortage in writing prior to their first potential exposure to the alternate dose or medication.
- 2. Written communication must include:
 - a. Description of the change(s)
 - b. Education on proper use, risk and dosing of medication
- 3. Communicate any special instruction for a particular shortage to all effected pharmacies and EMS services.

E. Agency Responsibility

- 1. Must post the written communication from the MCA and ensure that all providers that may have cause to use the medications are made aware of and are educated on proper use, risk and dosing of any new or replacement medication prior to their first potential exposure to the alternate dose or medication.

Michigan
MEDICATIONS
PERSONAL METERED DOSE INHALER USE
(MCA Optional Protocol)

Initial Date: 02/14/2023

Revised Date:

Section 9.4

Personal Metered Dose Inhaler Use (MCA Optional Protocol)



Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Purpose: Nebulized respiratory treatments are preferred over MDI's. This protocol is to allow for the use of the patient's own prescribed Metered Dose Inhaler (MDI) containing only albuterol, in place of nebulized albuterol administration by EMS personnel. This is to be used only in patients with **febrile respiratory symptoms**

- A. To substitute administration of **albuterol 2.5 mg/3ml NS** nebulized with use of the patient's own prescribed MDI the following criteria **MUST** be met.
1. A specific and applicable treatment protocol is being followed
 2. EMS provider administering patient prescribed MDI is MCA authorized to administer **albuterol 2.5 mg/3ml NS** nebulized within the treatment protocol

B. Indications

1. Patients with febrile respiratory symptoms in need of bronchodilator treatment

C. Requirements

1. Patient has a prescribed rescue Metered Dosed Inhaler (MDI) containing albuterol only
2. MDI is prescribed to the patient (no one else)
3. Medication is not expired
3. MDI has a functioning spacer (preferred not required)

D. Procedure

1. Assist patient in receiving four (4) puffs of their own rescue Albuterol Metered Dose Inhaler (MDI), with spacer, in place of each nebulized treatment of **albuterol 2.5 mg/3ml NS** as indicated in applicable treatment protocol.
2. Use of a spacer is optimal. When no spacer is available, ensure that that patient breathes out completely before each puff in order to inhale as much medication as is possible.
3. Do not use an MDI prescribed to another person.
4. All MDI's should be brought to the hospital with the patient, if transported.

**Michigan
MEDICATIONS**
PERSONAL METERED DOSE INHALER USE
(MCA Optional Protocol)

Initial Date: 02/14/2023

Revised Date:

Section 9.4

E. Directions for use an MDI with spacer (Figure 1)



Figure 1

1. Remove the cap from the MDI and spacer. Shake well
2. Insert the MDI into the open end of the spacer (opposite the mouthpiece).
3. Place the mouthpiece of the spacer between the patient's teeth and have them seal their lips tightly around it.
4. Have the patient breathe out completely
5. Press the MDI canister once.
6. Have the patient breathe in slowly and completely through their mouth. If you hear a "horn-like" sound, they are breathing too quickly and need to slow down.
7. Have the patient hold their breath for 10 seconds (count to 10 slowly) to allow the medication to reach the airway of the lung.
8. Repeat the above steps for each puff.
9. Replace the cap on your MDI when finished.

Tri-County Emergency Medical Control Authority
MEDICATION SECTION
EMS: MEDICATION AND
IV SUPPLY REQUIREMENTS



Initial Date: 2/12/2024
Revised Date:

Section: 9-5

EMS: Medication and IV Supply Requirements

- I. Emergency medical service vehicles will be equipped with medication boxes and IV kits or supplies consistent with their licensure level and protocols.
- II. The contents of the medication boxes are subject to inspection at any time by participating hospital pharmacy staff or by the medical control authority.
- III. Medication boxes will be prepared by MCA participating hospital pharmacies prior to each patient use see **Pharmacy: Medication and IV Supply Requirements Protocol**.
 - A. All medications will be obtained from an approved MCA participating pharmacy.
 - i. Oral glucose may be purchased and supplied by agencies.
 - ii. Agencies must have an MCA approved process in place for manufacture recalls.
- IV. IV kit supplies will be made available by MCA participating pharmacies or by delegated agencies per MCA approved procedure.
- V. Licensed EMS personnel will assure that a proper seal is in place on medication boxes
- VI. The ambulance agency and licensed EMS personnel are responsible for the security of the medications and supplies.
- VII. Medication boxes and IV supplies shall be locked and secured in the EMS vehicle, except when required for patient care. Each agency will have a MCA approved procedure in place to ensure controlled access to the medication boxes and IV supplies.
- VIII. Licensed EMS personnel will include the following MCA approved documentation when returning medication boxes (and IV supplies if applicable) to a secure location for pharmacy exchange.
 - A. All medications used and/or wasted from the medication box (and IV supplies if applicable)
 - B. Physician, PA or NP signature for controlled substances administered.
 - C. Witness signature for controlled substance waste
 - i. Whenever controlled substances are used from a medication box, any unused or contaminated medication must be wasted in the presence of a witness that is a licensed healthcare professional that is authorized by the receiving facility to sign for wasted controlled substances.
 - D. A completed TCEMCA drug box exchange form, EPCR form, or replacement form will be placed in every drug box delivered for exchange.
- IX. Opened syringes, needles, and any broken glass ampules will be properly disposed of and not left in the medication box. It is the responsibility of the licensed EMS personnel to clean any blood or body fluids from the outside and inside of the medication box before it is returned to the pharmacy.

Tri-County Emergency Medical Control Authority
MEDICATION SECTION
EMS: MEDICATION AND
IV SUPPLY REQUIREMENTS



Initial Date: 2/12/2024
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-
- X. If EMS personnel or agency discover a discrepancy in medication box contents, that does not affect patient care, they shall notify the pharmacy at the hospital they transported to of the discrepancy. If the discrepancy would affect patient care, immediately request an ALS ambulance to the scene. Report the discrepancy to the member hospital pharmacy you transported to. If an agency discovers a discrepancy during normal business hours, immediately contact TCEMCA. If after normal business hours, or unable to reach TCEMCA staff, take the drug box to a member hospital pharmacy and notify them of the discrepancy and get a replacement medication box.
- A. TCEMCA, the pharmacy, and the involved agency will mutually work to resolve any discrepancies. Any discrepancies, pharmacy issues, or concerns will be documented utilizing the TCEMCA Pharmacy Reporting Form. This form shall be completed and sent to pharmacy@tcemca.org email within 24 hours. For all medication discrepancies, if possible, a picture of the top of the medication box shall be attached with the form. Please contact TCEMCA office when submitting a Pharmacy Reporting Form.

Tri-County Emergency Medical Control Authority
MEDICATION SECTION
PHARMACY and MCA: MEDICATION AND IV SUPPLY
REQUIREMENTS



Initial Date: 2/12/2024
Revised Date:

Section: 9-6

Pharmacy and MCA: Medication and IV Supply Requirements

Roles

1. Pharmacies operated within the member hospitals, member Free Standing Emergency Departments, and member outpatient surgical centers of the medical control authority and participate in the medication exchange system established by this protocol are considered MCA participating pharmacies and shall be referred to as 'pharmacies' for this protocol.
2. The MCA participating pharmacy is responsible for ensuring that re-stocked EMS medication boxes (and if applicable, IV supplies) are available to EMS units 24/7 who bring a box for replacement. The Administrative Rules of the Michigan Board of Pharmacy (R 338.486)(4)(c) require that "The pharmacist shall routinely inspect these medications and, after use, shall verify the contents and replace the medications as necessary".
3. The Director of Pharmacy at each MCA participating pharmacy is responsible for assuring compliance with this protocol.

Responsibilities

1. Medication box refers to the boxes and additional packs (if MCA approved) that contain medications required to fulfill the care outlined in the MCA approved protocols.
 - a. All medications in approved protocols must be supplied in correct dosages, concentrations, and quantities to fulfill the MCA approved protocols.
 - b. All medications carried must have a corresponding protocol for use.
 - c. Medication boxes must be provided per licensure level, containing only medications that are MCA approved for that licensure level to administer.
2. Medication box contents remain the property of the MCA participating pharmacy. The MCA participating pharmacy will manage their respective inventory for restocking medication boxes (and if applicable, IV supplies).
 - a. Unless addressed by approved protocol, all medications (including over the counter medications) must be obtained from an MCA recognized participating pharmacy.
 - b. Oral Glucose is the only medication an agency may own and supply.
3. The medication box is purchased by the agency through TCEMCA and is considered owned by the TCEMCA system.
4. The medical control authority will maintain a list of the medication box numbers currently "in service", and will assign new medication box numbers, as needed.
5. The pharmacy will include in each box an MCA approved document(s) that state the inventory of the box, allow for usage and waste documentation, and required signatures (narcotic administration, narcotic waste).
6. IV kit supplies will be made available by designated TCEMCA pharmacies or by delegated agencies per MCA approved procedure.
7. The pharmacy will upon issuing or refilling a box assure the following are in place:

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MEDICATION SECTION
PHARMACY and MCA: MEDICATION AND IV SUPPLY
REQUIREMENTS



Initial Date: 2/12/2024
Revised Date:

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- a. Label/Relabel the medication box/pack with a pharmacy label which contain, at minimum.
 - i. The hospital name
 - ii. The name or initials of the pharmacist checking the box
 - iii. The date the box was restocked and checked.
 - iv. The expiration date of the first medication to expire in the box (this date must be at least three months from the date the box is being restocked and checked).
 - v. The tag number of the locks assigned to the box.
 - b. Attach to the exterior of the box a notification regarding any changes to contents of the medication box that deviates from the standard inventory list of contents.
 - c. Assure the box is sealed and secured.
8. The contents of the medication box are subject to inspection at any time by the medical control authority and/or pharmacy.
9. A current schematic or inventory list of the medication box (including concentrations and quantities) shall be submitted to the MCA by the pharmacy.
- The MCA is responsible for assuring that MDHHS has a current schematic or inventory list.
10. The pharmacy will be responsible for establishing requirements for EMS units to obtain or replace IV supplies (if applicable).
11. The pharmacy is responsible for providing a 24/7 accessible, secure environment for obtaining restocked medication boxes (and IV supplies if applicable) and returning of used medication boxes unless otherwise established by the MCA.
12. Upon receiving a used medication box from an EMS service, the pharmacy will:
- a. Check to assure that the box is properly sealed and contains documentation that includes:
 - i. All medications used and/or wasted from the medication box
 - ii. Physician, PA or NP signature for controlled substances administered.
 - iii. Witness signature for controlled substance wasted
 - b. Replace the used contents of the medication box (including IV supplies if applicable) and verify that all supplies and medications listed on the medical control authority medication box inventory form are present.
13. If a discrepancy is found by the pharmacy, the pharmacy shall contact TCEMCA and submit a completed TCEMCA Pharmacy Reporting Form to pharmacy@tcemca.org email, within 24 hours. If possible, a photo of the top of the medication box should be submitted with the TCEMCA Pharmacy Reporting Form.
14. TCEMCA utilizes orange plastic drug boxes, clear narcotic boxes, blue plastic specialist boxes, BLS Red Bags, Yellow Bags, Narcan kits, and draw-up epinephrine kits all referred to throughout protocols as medication boxes or drug boxes.
15. IV supplies are made available to agencies from designated member hospital pharmacies.

Initial Date: 05/31/2012

Revised Date: 02/15/2023

Section 9-7

Epinephrine Auto-Injector Procedure

Aliases: Epi-Pen ®

Purpose: To outline the use and resupply of epinephrine auto-injector/pediatric epinephrine auto-injector by authorized prehospital providers for life-threatening anaphylaxis and respiratory emergencies as outlined in applicable treatment protocols. Providers, opting out of draw-up epinephrine, may be authorized through TCEMCA to provide their own Epi-Pens. Providers must be licensed at or above the Emergency Medical Technician level unless otherwise specified by MCA selection. .

MCA Approval of **Epinephrine Auto-injector** for Select MFR Agencies



YES



NO

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

1. Indications

- A. Life-threatening allergic/anaphylactic and respiratory emergencies
- B. Use is outlined in applicable treatment protocol

2. Contraindications

- A. No absolute contraindications to life-threatening allergic/anaphylactic emergencies as described in applicable treatment protocols.

3. Cautions

- A. Use with caution in patients with heart disease, high blood pressure, and stroke.



- B. Contact Medical Control if child appears to weigh less than 10 kg (approx. 20 lbs.) prior to administration if possible.

4. Technique

- A. **Epinephrine auto-injector** is an auto-injector that injects medication into the intramuscular tissue when the device is pushed against the skin. Injection is to be done at the anterolateral portion of the thigh.

B. Dosing:

- i. **Epinephrine auto-injector** (0.3 mg) is used for patients weighing over 30 kg (approx. 60 lbs.)

- ii. **Pediatric epinephrine auto-injector** (0.15 mg) is used for patients weighing between 10-30 kg (approx. 20-60 lbs.)



- iii. Contact Medical Control if child appears to weigh less than 10 kg (approx. 20 lbs.), prior to **pediatric epinephrine auto-injector** administration, if possible

- C. Instructions for use are pictured on the side of each auto-injector.

- D. The auto-injector must be held in place for ten (10) seconds once the needle injects into the thigh.

Michigan
MEDICATION SECTION
EPINEPHRINE AUTO-INJECTOR PROCEDURE

Initial Date: 05/31/2012

Revised Date: 02/15/2023

Section 9-7

5. Documentation

- A. EMS providers will document any changes in the patient's condition and report those changes to on-line medical control.
- B. Complete an agency electronic patient care report as required by MCA.

6. Accountability

- A. **Epinephrine auto-injectors** will be stored in a secured compartment in a temperature-controlled area of the EMS vehicle.
- B. **Epinephrine auto-injectors** must be restocked at the pharmacy or through other Medical Control approved process in conformity with current pharmacy laws and the public health code. Utilization forms must be completed for each use.

Michigan
MEDICATION SECTION
MEDICATIONS (GENERAL)

Initial Date: 07/19/2023

Revised Date:

Section: 9-9R

MEDICATIONS (General)

A medication reference protocol (9-R series) is only applicable when used in conjunction with an MCA approved treatment protocol.

Medication Reference Protocols do not address licensure level, pre/post radio requirements, or other medications/procedures/assessments that may be required between initial dose and subsequent doses.

Medication Reference Protocols apply to the Michigan standardized EMS protocol suite Sections 1-10; therefore indications/contraindications are aligned with protocol restrictions (such as allowable age for administration) and may be more confining than the actual indications/contraindications of the medication.

Age:

1. Adult: patient > 14 years of age (will appear as “Adult” in the 9R series without age explanation)
2. Pediatric: patient ≤ 14 years of age (will appear as “Pediatric” in the 9R series without age explanation)
3. A medication with an age restrictions/considerations will be expressed as such in the 9R series.

Indications:

1. Indication(s) listed are in conjunction with protocols, there may be other uses for which EMS is not authorized to use a medication.

Contraindications:

1. Hypersensitivity to a medication is a contraindication to that medication. This applies to ALL medications and will not be restated on individual medication protocols.

Order of Operation

1. Adult (patients > 14 years of age):
 - a. Indications for medication use
 - i. Protocol (Sections 1-8,10)
 - ii. Medication Protocols (Section 9-9R)
 - b. Dosing
 - i. Protocols (Sections 1-8,10)
 - ii. Medication Protocols (Section 9-9R)
2. Pediatric (patients ≤ 14 years of age)
 - a. Indications for medication use
 - i. Protocol (Sections 1-8,10)
 - ii. Medication Protocols (Section 9-9R)

Michigan
MEDICATION SECTION
MEDICATIONS (GENERAL)

Initial Date: 07/19/2023

Revised Date:

Section: 9-9R

b. Dosing

- i. MI MEDIC cards
- ii. Treatment and/or Procedure Protocol (Sections 1-8, 10)
- iii. Medication Protocols (Section 9-9R)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-10R

Acetaminophen

Pharmacological Category: Analgesic, Nonopioid

Routes: PO

Indications:

1. Fever
2. Mild pain

Contraindications:

1. Known severe acute liver disease

Precautions:

1. Has received acetaminophen (i.e., Tylenol) or any medication containing acetaminophen (e.g., cold medication) in last four (4) hours.
2. Patient must be alert enough to take PO medication.

Expected effects:

1. Fever reduction
2. Pain relief

Side effects:

1. Nausea/vomiting

Notes:

1. Children < 60 days old require a documented rectal temperature (including time temperature obtained) prior to acetaminophen administration.

Dosing: ADULT FEVER

Indication: Fever

Adults administer: (per MCA selection)

1. Acetaminophen 650 mg PO

Dosing: PEDIATRIC FEVER

Indication: Fever

Pediatrics administer:

1. According to MI MEDIC
2. If MI MEDIC is not available administer using dosing chart below.

Dosing: PAIN MANAGEMENT

Indication: Mild Pain

Adults administer:

Initial Date: 07/19/2023

Revised Date: 12/10/2025

Section: 9-10R

1. Acetaminophen 650 mg PO

Pediatrics administer:

1. According to MI MEDIC
2. If MI MEDIC is not available use dosing chart below.

Children's Acetaminophen Elixir Dosing Table		
Child's Weight	Child's Age	Acetaminophen 160 mg/5mL
3-5 kg (6-12 lbs.)	0-2 mos.	1.25 mL (40 mg)
6-7 kg (13-16 lbs.)	3-6 mos.	3 mL (96 mg)
8-9 kg (17-20 lbs.)	7-10 mos.	4 mL (128 mg)
10-11 kg (21-25 lbs.)	11-18 mos.	5 mL (160 mg)
12-14 kg (26-31 lbs.)	19 mos.-35 mos.	6 mL (192 mg)
15-18 kg (32-40 lbs.)	3-4 yrs.	7 mL (224 mg)
19-23 kg (41-51 lbs.)	5-6 yrs.	9 mL (288 mg)
24-29 kg (52-64 lbs.)	7-9 yrs.	12 mL (384 mg)
30-36 kg (65-79 lbs.)	10-14 yrs.	15 mL (480 mg)

Used in the Following Protocols

Adult Fever (Section 3 Adult Treatment)

Pediatric Fever (Section 4 Obstetrics and Pediatrics)

Pain Management (Section 7 Procedures)

Michigan
MEDICATION SECTION
ADENOSINE

Initial Date: 07/19/2023

Revised Date:

Section: 9-11R

Adenosine

Pharmacological Category: Antiarrhythmic Agent, Miscellaneous; Diagnostic Agent

Routes: IV rapid push

Indications:

1. Stable but symptomatic supraventricular tachycardia that is a regular and narrow rhythm (i.e., SVT, A-Flutter) that does not convert with approved vagal maneuver.

Contraindications:

1. Patients with diagnosed sinus node dysfunction (e.g., sick sinus syndrome, WPW syndrome) unless pacemaker is present and functioning
2. Patients with diagnosed or observed high-grade AV block (i.e., 2nd or 3rd degree heart block) unless pacemaker is present and functioning
3. Patients with diagnosed asthma

Precautions:

1. Be prepared for fluid resuscitation if required
2. Monitor for polymorphic V-Tach
3. Be prepared for full resuscitation efforts.

Expected effects:

1. Slowed conduction through the AV node
2. Conversion to NSR

Side effects:

1. Hypotension – may produce profound vasodilation
2. Flushing
3. Dyspnea
4. Light-headedness
5. Nausea
6. Feeling of impending doom
7. Seizures

Notes:

1. Use most proximal injection site
2. Follow immediately with NS flush
3. Record using cardiac monitor during and after administration

Michigan
MEDICATION SECTION
ADENSOINE

Initial Date: 07/19/2023

Revised Date:

Section: 9-11R

Dosing: TACHYCARDIA (Adult)

Indication: Symptomatic SVT

Adults administer:

1. Adenosine 6 mg rapid IV push followed immediately with 20 mL NS flush
2. If conversion does not occur, and the rhythm persists, administer adenosine 12 mg rapid IV push followed immediately with 20 mL NS flush

Dosing: PEDIATRIC TACHYCARDIA

Indication: Symptomatic SVT

Pediatrics administer:

1. According to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. Adenosine 0.1 mg/kg (max dose 6 mg) rapid IV push immediately followed by 10 mL flush
 - b. If conversion does not occur, and the rhythm persists administer 0.2 mg/kg ____
____(max of 12 mg) rapid IV push immediately followed by 10 mL NS flush

Used in the Following Protocols

Tachycardia (Section 5 Adult Cardiac)

Pediatric Tachycardia (Section 6 Pediatric Cardiac)

Initial Date: 07/19/23
Revised Date: 12/10/2025

Section: 9-12R

Albuterol

Pharmacological Category: Beta-2 Agonist, Bronchodilator

Routes: Nebulized

Indications:

1. Bronchospasm (wheezing)
2. Known or suspected hyperkalemia resulting from a crush injury.

Expected effects:

1. Bronchodilation
2. Decreased respiratory work/effort

Dosing: RESPIRATORY DISTRESS (Adult)
PEDIATRIC RESPIRATORY DISTRESS
ANAPHYLAXIS/ALLERGIC REACTION
PULMONARY EDEMA/CARDIOGENIC SHOCK

Indication: Respiratory distress with wheezing

Adults administer:

1. Albuterol 2.5 mg/3mL NS nebulized

Pediatrics administer:

*Albuterol dosage is not weight/age based but it does appear on MI MEDIC

1. Albuterol 2.5 mg/3mL NS nebulized

Dosing: GENERAL CRUSH INJURY

Indication: Suspected hyperkalemia due to crush injury

Adults administer:

1. Albuterol 2.5 mg/3mL NS continuous nebulization to a maximum dose of 20 mg

Pediatrics administer:

* Albuterol dosage is not weight/age based but it does appear on MI MEDIC

1. Albuterol 2.5 mg/3mL NS continuous nebulization to a maximum dose of 20 mg

Note: A single responding unit is not expected to carry 20 mg (8 nebulers) of albuterol for treatment of up to 20 mg in Crush Injury protocol. Dosage is a maximum if other resources (i.e., Haz Mat drug box, second drug box) are available.

Used in the Following Protocols

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

General Crush Injury (Section 2 Trauma and Environmental)

Respiratory Distress (Section 3 Adult Treatment)

Pediatric Respiratory Distress (Section 4 Obstetrics and Pediatrics)

Pulmonary Edema/Cardiogenic Shock (Section 5 Adult Cardiac)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-13R

Amiodarone

Pharmacological Category: Antiarrhythmic Agent

Routes: IV/IO

Indications:

1. Cardiac Arrest (V-Fib or pulseless V-Tach)
2. Tachycardiac that is stable but symptomatic (i.e., does not require immediate cardioversion)
 - a. Rhythm is irregular and narrow (i.e., A-Fib/A-Flutter)
 - b. Rhythm is regular with a wide QRS (i.e., V-Tach, SVT/A-Flutter with aberrancy)

Contraindications:

1. Cardiogenic Shock
2. Severe sinus node dysfunction
3. Bradycardia with syncope except with functioning artificial pacemaker

Expected effects:

1. Prolongs refractory period
2. Inhibits alpha and beta adrenergic stimulation

Side effects:

1. Prolonged QT
2. Vasodilation
3. Hypotension

Dosing: CARDIAC ARREST (Adult)

Indication: V-Fib/V-Tach

Adults administer:

1. Amiodarone 300 mg IV/IO (May repeat once 150 mg IV/IO)

Dosing: TACHYCARDIA (Adult)

Indication: Irregular Narrow rhythm (i.e., A-Fib/A-Flutter) or Regular Wide QRS rhythm (i.e., V-Tach, SVT/A-Flutter with aberrancy):

Adults administer:

1. Amiodarone 150 mg IV over 10 minutes

Indication: Suspected V-Tach

Adults administer:

1. Amiodarone 150 mg IV over 10 minutes as needed to a maximum of 450 mg

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Revised Date: 12/10/2025

Section: 9-13R

Dosing: PEDS CARDIAC ARREST

Indication: V-Fib/V-Tach

Pediatrics administer:

1. According to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Amiodarone 5 mg/kg (max single dose 300 mg) IV/IO. May repeat twice.
Do not exceed 450 mg total

Dosing: PEDS TACHYCARDIA

Indication: Unstable Regular, Wide Complex Tachycardia

Pediatrics administer:

1. According to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Amiodarone 5 mg/kg (max single dose 300 mg) IV/IO slow push over 10 minutes. May repeat twice. Do not exceed 450 mg total IV/IO
 - b. MI MEDIC includes amiodarone for shock resistant V-fib. The dosage is the same for unstable wide complex tachycardia (with a pulse), administered slow IV push.

Used in the Following Protocols

General Cardiac Arrest (Section 5 Adult Cardiac)

Tachycardia (Section 5 Adult Cardiac)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Pediatric Tachycardia (Section 6 Pediatric Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-14R

Aspirin

Pharmacological Category: Analgesic, Nonopioid; Antiplatelet Agent; Nonsteroidal Anti-inflammatory Drug (NSAID), Oral; Salicylate

Routes: PO

Indications:

1. Suspected cardiac chest pain
2. Suspected myocardial infarction

Contraindications:

1. Hypersensitivity to nonsteroidal anti-inflammatories

Dosing: CHEST PAIN/ACUTE CORONARY SYNDROME

Indication: Cardiac chest pain/acute coronary syndrome

Adults administer:

1. Aspirin up to 325 mg PO (chew and swallow). If no aspirin taken or suspected insufficient dose taken since the onset of chest pain, administer additional aspirin to achieve a total dose of up to 325 mg.

Used in the Following Protocols

Chest Pain/Acute Coronary Syndrome (Section 5 Adult Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-15R

Atropine

Pharmacological Category: Anticholinergic Agent; Antidote; Antispasmodic Agent, Gastrointestinal

Routes: IV/IO

Indications:

1. Severe symptomatic bradycardia
2. Exposure to organophosphates or other nerve agents when Nerve Agent (NA) Antidote Kit is not available.

Expected effects:

1. Increased heart rate
2. Dilated pupils

Note: For Nerve Agent/Organophosphate Pesticide Exposure, when NA Antidote kit is not available, pralidoxime should also be administered in conjunction with atropine when available.

Dosing: CRASHING ADULT/IMPENDING ARREST

Indication: Bradycardia

Adults administer:

1. Atropine 1 mg IV/IO

Dosing: ADULT BRADYCARDIA

Indication: Bradycardia

Adults administer:

1. Atropine 1 mg IV/IO rapid push repeating every 3-5 minutes to a total dose of 3 mg

Dosing: PEDIATRIC BRADYCARDIA

Indication: Bradycardia

Pediatrics administer:

1. According to MI MEDIC Cards
2. If MI MEDIC Cards are not available administer:
 - a. Atropine 0.02 mg/kg IV/IO (minimum dose 0.1 mg, maximum single dose 0.5 mg).May repeat once in 5 minutes, if effective.

Dosing: NERVE AGENT/ORGANOPHOSPHATE PESTICIDE EXPOSURE

Indication: Nerve Agent/Organophosphate Pesticide Exposure when NA Antidote Kit is not available.

See chart below for number of NA kits required based on age and symptoms.

Adults administer:

1. Atropine 2 mg IM/IV for every 1 NA kit that is required.

Pediatrics administer:

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1. According to MI MEDIC cards
2. If MI MEDIC cards are not available refer to CHART A below for atropine dosage.
3. Refer to CHART B below and administer 2 mg atropine IV/IM for every one NA Antidote kit required.

CHART A

Nerve Agent/Organophosphate Antidotes/Countermeasures

Weight	Age	Duodote ¹ Mod-Severe Sxs	Atropen ² (1 mg) Mod- Severe Sxs	Atropine Dose (0.1 mg/kg) IM/IV/IO	Atropine Vial ² (1 mg/mL)	Cardiac Atropine ^{2,3} (1 mg/10 mL)	Midazolam ⁴ (10 mg/2 mL) IM/IV/IO
3-5 kg (6-11 lbs)	0-2 months	1	1	0.4 mg	0.4 mL	4 mL	0.1 mL
6-7 kg (13-16 lbs)	3-6 months	1	1	0.7 mg	0.7 mL	7 mL	0.2 mL
8-9 kg (17-20 lbs)	7-10 months	1	1	0.9 mg	0.9 mL	9 mL	0.2 mL
10-11 (21-25 lbs)	11-18 months	1	1	1 mg	1 mL	10 mL	0.2 mL
12-14 kg (26-31 lbs)	19-35 months	1	2	1.3 mg	1.3 mL	13 mL	0.25 mL
15-18 kg (32-40 lbs)	3-4 years	1	2	1.6 mg	1.6 mL	16 mL	0.3 mL
19-23 kg (41-51)	5-6 years	1	2	2 mg	2 mL	20 mL	0.4 mL
24-29 kg (52-64)	7-9 years	2	3	2.6 mg	2.6 mL	26 mL	0.5 mL
30-36 kg (65-79 lbs)	10-14 years	2	3	3.3 mg	3.3 mL	33 mL	0.6 mL
Adult	>14 years	2 to 3	4 to 6	4 to 6 mg	4 to 6 mL	40-60 mL	2 mL

¹Preferred initial autoinjector, ²May Repeat atropine every 5 minutes until airway secretions decrease (6 mg maximum), ³Not available in MEDDRUN, ⁴Patients with severe symptoms should receive midazolam even if not obviously seizing

CHART B

**Michigan
MEDICATION SECTION
ATROPINE**

Initial Date: 07/19/2023

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	Clinical Findings	Signs/Symptoms	Required Conditions	NA Kits To Be Delivered
SELF-RESCUE	Threshold Symptoms	• Dim vision • Increased tearing • Runny nose • Nausea/vomiting • Abdominal cramps • Shortness of breath	Threshold Symptoms -and- Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit (self-rescue)
ADULT PATIENT > 8 years of age	Mild Symptoms and Signs	• Increased tearing • Increased salivation • Dim Vision • Runny nose • Sweating • Nausea/vomiting • Abdominal cramps • Diarrhea	 Medical Control Order	1 NA Kit
	Moderate Symptoms and Signs	• Constricted pupils • Difficulty breathing • Severe vomiting	Constricted Pupils	2 NA Kits
	Severe Signs	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Constricted Pupils	3 NA Kits (If 3 NA Kits are used, administer 1 st dose of available benzodiazepine)

**Michigan
MEDICATION SECTION
ATROPINE**

Initial Date: 07/19/2023

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	Clinical Findings	Signs/Symptoms	Required Conditions	NA Kits To Be Delivered
PEDIATRIC < 8 years of age	Pediatric Patient with Non-Severe Signs/Symptoms	• <i>Mild or moderate symptoms as above</i>	Threshold Symptoms <i>-and-</i> Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit
	Pediatric Patient with Severe Signs/Symptoms	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Severe breathing difficulty Weakness	1 NA Kit

Used in the Following Protocols

Crashing Adult/Impending Arrest (Section 3 Adult Treatment)

Bradycardia (Section 5 Adult Cardiac)

Pediatric Bradycardia (Section 6 Pediatric Cardiac)

Nerve Agent/Organophosphate Pesticide Exposure (Section 10 Special Operations)

Initial Date: 07/19/2023

Revised Date:

Section: 9-16R

Calcium Chloride

Pharmacological Category: Calcium Salt; Electrolyte Supplement, Parenteral

Routes: IV/IO

Indications:

1. Cardiac arrest in the renal failure patient
2. Calcium channel blocker toxicity
3. Crush Injury with suspected hyperkalemia

Precautions:

1. Use with caution in patients on digoxin; hypercalcemia may precipitate cardiac arrhythmias.
2. Calcium chloride is not compatible with sodium bicarbonate, flush IV line between medications.

Expected effects:

1. Increased force of myocardial contraction
2. Rise in arterial pressure

Note: If given in a line that infiltrated, calcium chloride administration may cause skin sloughing.

Dosing: GENERAL CRUSH INJURY

Indication: Suspected hyperkalemia (peaked T waves, widened QRS, hypotension)

Adults administer:

1. Calcium chloride 1 gm slow IVP over 5 minutes

Pediatrics administer:

1. According to MI MEDIC cards
2. If MI MEDIC Cards are not available administer:
 - a. Calcium chloride 20 mg/kg slow IVP over 5 minutes. Max dose 1 gm

Dosing: POISONING/OVERDOSE/ENVIRONMENTAL EXPOSURE

Indication: Symptomatic calcium channel blocker overdose

Initial Date: 07/19/2023

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Adults administer:

1. Calcium chloride 1 gm IV

Pediatrics administer:

1. According to MI MEDIC Cards
2. If MI MEDIC Cards are not available administer:
 - a. Calcium chloride 20 mg/kg IV. Max dose 1 gm.

Dosing: GENERAL CARDIAC ARREST (Adult)

Indication: known or highly suspected hyperkalemia (e.g., dialysis patient, EKG changes)

Adults administer:

1. Calcium chloride (10%) 1 gm/10 mL IV/IO

Dosing: PEDIATRIC CARDIAC ARREST

Indication: hyperkalemia (renal failure)

Pediatrics administer:

1. According to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. Calcium chloride (10%) 20 mg/kg (0.2 mL/kg). Max single dose 1 gm

Used in the Following Protocols

General Crush Injury (Section 2 Trauma and Environmental)

Poisoning/Overdose/Environmental Exposure (Section 2 Trauma and Environmental)

General Cardiac Arrest (Section 5 Adult Cardiac)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Initial Date: 07/19/2023
Revised Date: 08/11/2023

Section: 9-17R

Cefazolin

Pharmacological Category: Antibiotic, Cephalosporin (First Generation)

Routes: IV/IO

Indications:

1. **Open fractures**
2. Partial/complete amputations
3. Major soft tissue injuries (e.g., mangled extremity)

Contraindications:

1. Infusion <7 years of age (volume for infusion is larger than allowable fluid bolus).

Notes:

Slow IV push dilution of cefazolin

1. Dilute 2 gm cefazolin with 20 mL NS
 - a. Inject two 10 mL flushes into one 2 gm vial of cefazolin**OR**
 - b. Inject one 10 mL flush into each 1 gm vial of cefazolin.
2. Resulting concentration is 100 mg/mL

Infusion dilution of cefazolin

1. Add cefazolin dosage (slow IV push dilution) to 100 mL bag of NS
 - a. Adults: add 20 mL (2 gm diluted) to 100 mL bag of NS
 - b. Pediatrics > 7 years of age: volume of diluted cefazolin added to 100 mL of NS will be calculated weight-based dosage.

Dosing: SOFT TISSUE AND ORTHOPEDIC INJURIES

Indication: Partial/complete amputation, major soft tissue injuries (e.g., mangled extremity) and open fractures.

Adults administer:

1. Cefazolin 2 gm (slow IV push dilution), slow IVP over 3-5 minutes
- OR**
2. Cefazolin Infusion: 2 gm (slow IV push dilution) added to a 100 mL bag of NS. Infuse over 15-30 minutes.

Pediatrics

1. Pediatrics slow IVP cefazolin administer:
 - a. Cefazolin (slow IV push dilution) according to MI MEDIC cards.
 - i. If MI MEDIC cards are not available administer Cefazolin (slow IV push dilution) 30 mg/kg slow IVP over 3-5 minutes. Maximum dose 2 gm.**OR**
2. Pediatrics ≥ 7 years of age infusion of cefazolin administer:

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- a. Cefazolin infusion according to MI MEDIC cards
 - a. If MI MEDIC cards are not available administer cefazolin (slow IV push dilution) 30 mg/kg added to 100 mL bag of NS. Max dose 2 gms. Infuse over 15-30 minutes.

Used in the Following Protocols

Soft Tissue and Orthopedic Injuries (Section 2 Trauma and Environmental)

Initial Date: 07/19/2023
Revised Date: 08/11/2023

Section: 9-18R

Ceftriazone

Pharmacological Category: Antibiotic, Cephalosporin (Third Generation)

Indications:

1. Open fractures
2. Partial/complete amputations
3. Major soft tissue injuries (e.g., mangled extremity).

Contraindications:

1. Patients $\leq$ 2 months old (any administration of ceftriazone)
2. Infusion $<$ 7 years of age (volume for infusion is larger than allowable fluid bolus).
3. Allergies to cefepime (Maxipime) or cefotaxime (Claforan)

Side effects:

1. Rapid administration can result in tachycardia, restlessness, diaphoresis, and palpitations, pain at injection site.

Notes:

Slow IV push dilution of ceftriazone

1. Dilute 2 gm ceftriazone with 20 mL NS:
 - a. Inject two 10 mL flushes into one 2 gm vial of ceftriazone**OR**
 - b. Inject one 10 mL flush into each 1 gm vial of ceftriazone.
2. Resulting concentration is 100 mg/mL

Infusion dilution of ceftriazone

1. Add ceftriazone dosage (slow IV push dilution) to 100 mL bag of NS:
 - a. Adults: add 20 mL (2 gm of slow IV push dilution) to 100 mL bag of NS
 - b. Pediatrics $>$ 7 years of age: volume of diluted ceftriazone added to 100 mL bag of NS will be calculated weight-based dosage.

Dosing: SOFT TISSUE AND ORTHOPEDIC INJURIES

Indication: Partial/complete amputations, major soft tissue injuries (e.g., mangled extremity) and open fractures.

Adults administer:

1. Ceftriazone Slow IVP: 2gm (slow IV push dilution), slow IVP over 3-5 minutes
- OR**
2. Ceftriazone Infusion: 2gm (slow IV push dilution) added to a 100 mL bag of NS.
Infuse over 15-30 minutes.

Pediatrics

1. Pediatrics $>$ 2 months old ceftriazone slow IV push administer:
 - a. Ceftriazone (slow IV push dilution) according to MI MEDIC cards.

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MEDICATION SECTION
CEFTRIAXONE

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ii. If MI MEDIC cards are not available administer ceftriaxone (slow IV push dilution) 50 mg/kg slow IVP over 3-5 minutes. Maximum dose 2 gm.

OR

2. Pediatrics ≥ 7 years of age ceftriaxone infusion administer:

a. Ceftriaxone infusion according to MI MEDIC cards

i. If MI MEDIC cards are not available administer ceftriaxone (slow IV push dilution) 50 mg/kg added to 100 mL bag of NS. Max dose 2 gm. Infuse over 15-30 minutes.

Used in the Following Protocol(s):

Soft Tissue and Orthopedic Injuries (Section 2 Trauma and Environmental)

Initial Date: 07/19/2023
Revised Date: 03/03/2025

Section: 9-19R

Dextrose

Pharmacological Category: Glucose-Elevating Agent

Routes: IV/IO

Indications:

1. Hypoglycemia
2. Altered mental status

Precautions:

1. Ensure patent line, extravasation may cause significant tissue damage.
2. Dextrose should be pushed slowly (e.g., over 1-2 minutes).

Expected effects:

1. Increased blood glucose level
2. Improvement in altered mental status.

Notes:

1. Instructions for diluting dextrose
 - a. To obtain dextrose 10%, discard 40 mL out of one amp of D50, then draw up 40 mL of NS into the D50 ampule.
 - b. To obtain dextrose 12.5%, discard 37.5 mL out of one amp of D50, then draw 37.5 mL of NS into the D50 ampule
 - c. To obtain dextrose 25%, discard 25 mL out of one amp of D50, then draw 25 mL of NS into the D50 ampule
2. May utilize 10% for all ages 5 mL/kg (0.5 gm/kg) up to 250 mL

Dosing: ADULT ALTERED MENTAL STATUS

Indication: Patient is demonstrating signs of hypoglycemia, blood glucose is < 60 mg/dL.

Adults administer:

1. Dextrose 25 gm IV, titrate to fully awake and oriented.

Dosing: ADULT SEIZURES

Indication: Seizure patient with blood glucose < 60 mg/dL

Adults administer:

1. Dextrose 25 gm IV

Dosing: PEDIATRIC ALTERED MENTAL STATUS

Indication: Patient is demonstrating signs of hypoglycemia and blood glucose is <60 mg/dL

Pediatrics administer:

1. Dextrose according to MI MEDIC
2. If MI MEDIC is not available use table below:

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MEDICATION SECTION
DEXTROSE

Initial Date: 07/19/2023
Revised Date: 03/03/2025

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Dosing: PEDIATRIC SEIZURES

Indication: Pediatric seizure patient and blood glucose is <60 mg/dL:

Pediatrics administer:

1. Dextrose according to MI MEDIC
2. If MI MEDIC cards are not available utilize the tablet below.

Dosing: PEDIATRIC CARDIAC ARREST

Indication: Pediatric patients in cardiac arrest with a blood glucose is less than 60 mg/dL

Pediatrics administer:

1. Dextrose according to MI MEDIC
2. If MI MEDIC cards are not available utilize the table below.
3. If chart is not available administer dextrose 0.5 g/kg

Color	Age	Weight	Dose	Concentration	Volume		Concentration	Volume
Grey	0-2 months	3-5 kg (6-11 lbs.)	2.5g	Dextrose 12.5%	20 mL	OR	Dextrose 10%	25 mL
Pink	3-6 months	6-7 kg (13-16 lbs.)	3.25g	Dextrose 25%	13 mL	OR	Dextrose 10%	33 mL
Red	7-10 months	8-9 kg (17-20 lbs.)	4.25g	Dextrose 25%	17 mL	OR	Dextrose 10%	43 mL
Purple	11-18 months	10-11 kg (21-25 lbs.)	5g	Dextrose 25%	20 mL	OR	Dextrose 10%	50 mL
Yellow	19-35 months	12-14 kg (26-31 lbs.)	6.25g	Dextrose 25%	25 mL	OR	Dextrose 10%	63 mL
White	3-4 years	15-18 kg (32-40 lbs.)	8g	Dextrose 25%	32 mL	OR	Dextrose 10%	80 mL
Blue	5-6 years	19-23 kg (41-50 lbs.)	10g	Dextrose 25%	40 mL	OR	Dextrose 10%	100 mL
Orange	7-9 years	24-29 kg (52-64 lbs.)	12.5g	Dextrose 50%	25 mL	OR	Dextrose 10%	125 mL
Green	10-14 Years	30-36 kg (65-79 lbs.)	15g	Dextrose 50%	40 mL	OR	Dextrose 10%	150 mL

Used in the Following Protocols

Altered Mental Status (Section 3 Adult Treatment)

Seizures (Section 3 Adult Treatment)

Pediatric Altered Mental Status (Section 4 Obstetrics and Pediatrics)

Pediatric Seizures (Section 4 Obstetrics and Pediatrics)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-20R

Diazepam

Pharmacological Category: Antiseizure Agent, Benzodiazepine

Routes: IV/IO

Indications:

1. Procedural sedation

Precautions:

1. Respiratory depression
2. Hypotension

Expected effects:

1. Skeletal muscle relaxation

Notes:

1. Not used for pediatric procedural sedation

Dosing: PROCEDURAL SEDATION

Indication: Procedural sedation

Adults administer:

1. Diazepam 5-10 mg (0.1 mg/kg) IV/IO titrated slowly. May repeat every 5 minutes to a maximum of 0.3 mg/kg.

Used in the Following Protocols

Patient Procedure Sedation (Section 7 Procedures)

Initial Date: 07/19/2023
Revised Date: 08/11/2023

Section: 9-21R

Diltiazem

Pharmacological Category: Antiarrhythmic Agent, Calcium Channel Blocker

Routes: IV/IO

Indications:

1. Symptomatic Tachycardia: Narrow Complex (Regular and Narrow or Irregular and Narrow rhythms)

Contraindications:

1. Patients with diagnosed sinus node dysfunction (e.g., sick sinus syndrome, WPW syndrome) unless pacemaker is present and functioning.
2. Patients with diagnosed or observed high-grade AV block (i.e., 2nd or 3rd degree heart block) unless pacemaker is present and functioning.

Precautions:

1. Be prepared to administer fluid bolus

Expected effects:

1. Resolution of rapid ventricular response or return to NSR

Side effects:

1. Hypotension

Dosing: ADULT TACHYCARDIA

Indication: Regular Narrow Complex Tachycardia (i.e., SVT, A-Flutter) and Irregular Narrow Complex Tachycardia (i.e., A-Fib/A-Flutter)

Adults administer:

1. Diltiazem 15-20 mg (0.25 mg/kg) IV slowly

Used in the Following Protocols

Tachycardia (Section 5 – Adult Cardiac)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-22R

Diphenhydramine

Pharmacological Category: Histamine H1 Antagonist

Routes: IV/IO/IM

Indications:

1. Anaphylaxis
2. Mild or moderate allergic reaction
3. Urticaria/hives
4. Nausea and vomiting

Expected effects:

1. Antihistamine, decreased urticarial, decreased itching
2. Drowsiness

Dosing: NAUSEA AND VOMITING

Indications: Nausea and vomiting

Adults administer:

1. Diphenhydramine 12.5-25 mg IV/IM. Maximum dose 25 mg.

Pediatric (>2 years of age AND > 12 kg) administer:

1. Diphenhydramine 1.0 mg/kg IV. Max dose 25 mg

Dosing: ANAPHYLAXIS ALLERGIC REACTION

Indication: Anaphylaxis/allergic reaction

Adults administer:

1. Diphenhydramine 50 mg IM/IV/IO

Pediatrics administer:

1. According to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Diphenhydramine 1 mg/kg IM/IV/IO. Maximum dose 50 mg.

Dosing: POISONING/OVERDOSE/ENVIRONMENTAL EXPOSURE

Indication: extrapyramidal dystonic reactions

Adults administer:

1. Diphenhydramine 50 mg IV.

Pediatrics administer:

1. Diphenhydramine 1 mg/kg IV. Max dose 50 mg.

Used in the Following Protocols

Nausea & Vomiting (Section 1 General Treatment)

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

Poisoning/Overdose/Environmental Exposure (Section 2 Trauma and Environmental)

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Epinephrine

Pharmacological Category: Sympathomimetic agent

Routes: IV/IO/IM, Nebulized

Indications:

1. Anaphylaxis
2. Bradycardia
3. Respiratory distress
4. Hypotension
5. Cardiac arrest

Expected effects:

1. Decreased wheezing
2. Increased BP
3. Increased HR

Notes:

1. This protocol does NOT apply to Epi Auto Injector (see Epi Auto Injector Protocol)
2. Note that epinephrine is not utilized in the pediatric bradycardia protocol

Preparing PUSH DOSE Epinephrine:

1. Prepare (epinephrine 10 mcg/mL)
 - a. Combine 1 mL of 1 mg/10 mL epinephrine in 9mL NS

Dosing: SHOCK

Indication: Hypotension unresponsive to fluid bolus administration

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

Pediatrics administer:

1. PUSH DOSE epinephrine utilizing MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. PUSH DOSE epinephrine 1 mcg/kg (0.1 mL of epinephrine 10 mcg/mL) IV/IO. Maximum single dose 10 mcg (1 mL). Repeat every 3-5 minutes.

Dosing: ANAPHYLAXIS/ALLERGIC REACTION

Indication: Anaphylaxis/Severe Allergic Reaction

Adults administer:

1. Epinephrine (1mg/mL) 0.3 mg (0.3 mL) IM. May repeat one time after 3-5 minutes if patient remains hypotensive. Maximum of 2 doses total of epinephrine (including

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epi pen).

Pediatrics administer EPI IM:

1. EPI IM according to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. For child weighing ≤ 30 kg or approx. 60 lbs.
 - i. Epinephrine (1mg/mL) 0.15 mg (0.15 mL) IM. May repeat one time after 3-5 minutes if patient remains hypotensive. Maximum of two IM doses (including epi pen).
 - b. For child weighing > 30 kg or approx. 60 lbs.
 - i. Epinephrine (1mg/mL) 0.3 mg (0.3 mL) IM. May repeat one time after 3-5 minutes if patient remains hypotensive. Maximum of two IM doses total (including epi pen).

Indication: Hypotension not responsive to fluid bolus administration and/or impending arrest

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

Pediatrics administer:

1. PUSH DOSE epinephrine utilizing MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. PUSH DOSE epinephrine 1 mcg/kg (0.1 mL of epinephrine 10 mcg/mL) IV/IO. Maximum single dose 10 mcg (1 mL). Repeat every 3-5 minutes.

Dosing: ADULT RESPIRATORY DISTRESS

Indication: Impending respiratory failure and unable to tolerate nebulizer therapy

Adults administer EPI IM:

1. Epinephrine (1mg/mL) 0.3 mg (0.3 mL) IM

Dosing: CRASHING ADULT/IMPENDING ARREST

Indication: Patient in whom cardiac or respiratory arrest appears imminent and hypotension is unresponsive to fluid bolus administration

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

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Dosing: PEDIATRIC RESPIRATORY DISTRESS, FAILURE OR ARREST

Indication: Pediatric patient presents with stridor at rest without suspected airway obstruction.

Pediatrics administer EPI IM:

1. EPI IM according to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. Child weighing ≤ 30 kg or approx. 60 lbs.:
 - i. Epinephrine (1 mg/mL) 0.15 mg (0.15 mL) IM
 - b. Child weighing > 30 kg or approx. 60 lbs.
 - i. Epinephrine (1 mg/mL) 0.3 mg (0.3 mL) IM

Indication: Severe respiratory distress

Pediatrics administer NEBULIZED EPI

1. Epinephrine (1 mg/1 mL) 5 mg nebulized

Dosing: ADULT CARDIAC ARREST

Indication: Cardiac arrest

Adults administer:

1. Epinephrine (1 mg/10 mL) 1 mg IV/IO every 3 to 5 minutes

Dosing: PEDIATRIC CARDIAC ARREST

Indication: Cardiac arrest

Pediatrics administer:

1. Epinephrine according to MI MEDIC cards.
2. If MI MEDIC cards are not available administer.
 - a. Epinephrine (1 mg/10 mL), 0.01 mg/kg (0.1 mL/kg). Max dose 1 mg (10 mL).
Repeat every 3-5 minutes

Dosing: ADULT BRADYCARDIA

Indication: Patients with persistent symptomatic bradycardia

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

Dosing: ADULT CHF/CARDIOGENIC SHOCK

Indication: If SBP is below 100 mmHG treat for cardiogenic shock

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

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Dosing: ADULT ROSC

Indication: Hypotension unresponsive to fluid bolus administration

Adults administer:

1. PUSH DOSE epinephrine 10-20 mcg (1-2 mL of 10 mcg/mL) IV/IO. Repeat every 3-5 minutes. Titrate to SBP > 90 mm/Hg.

Dosing: PEDIATRIC BRADYCARDIA

Indication: If pulse remains < 60, despite oxygenation & ventilation

Pediatrics administer:

1. Epinephrine according to MI MEDIC cards.
2. If MI MEDIC cards are not available administer:
 - a. Epinephrine (1 mg/10 mL) 0.01 mg/kg (0.1 mL/kg) IV/IO up to 1 mg (10 mL). Repeat every 3-5 minutes.

Dosing: PEDIATRIC ROSC

Indication: Hypotension unresponsive to fluid bolus administration

Pediatrics administer:

1. PUSH DOSE epinephrine according to MI MEDIC cards, titrating to age appropriate SBP per MI MEDIC cards.
2. If MI MEDIC cards are not available administer:
 - a. PUSH DOSE epinephrine 1 mcg/kg (0.1 mL of epinephrine 10 mcg/mL) IV/IO. Maximum single dose 10 mcg (1 mL). Repeat every 3-5 minutes. Titrate to SBP > 70 mmHG + (2 x age in years) up to 100 mmHg.

Used in the Following Protocols

Shock (Section 1 General Treatment)

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

Respiratory Distress (Section 3 Adult Treatment)

Crashing Adult/Impending Arrest (Section 3 Adult Treatment)

Pediatric Respiratory Distress, Failure or Arrest (Section 4 Obstetrics and Pediatrics)

General Cardiac Arrest (Section 5 Adult Cardiac)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Bradycardia (Section 5 Adult Cardiac)

Pulmonary Edema/Cardiogenic Shock (Section 5 Adult Cardiac)

Pediatric Bradycardia (Section 6 Pediatric Cardiac)

Return of Spontaneous Circulation (ROSC)-Adult (Section 3 Adult Treatment)

Peds ROSC (Section 4 Obstetrics and Pediatrics)

MCA Name Tri-County Emergency Medical Control Authority

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Fentanyl

Pharmacological Category: Analgesic, Opioid; General Anesthetic

Routes: IV/IO/IM/IN

Indications:

1. Pain management
2. Patient sedation

Precautions:

1. Pregnant or suspected pregnant patients
 - a. Optimize non-pharmacologic interventions as directed in the **Pain Management Protocol**.
 - b. For mild to moderate pain, use acetaminophen as directed in the **Pain Management Protocol**.
 - c. For severe pain (greater than 7 on the Wong Pain Scale), administer opioid as directed in the **Pain Management Protocol**. Administer IV/IO slowly, titrating to lowest dose needed to reduce pain score to less than 7.
 - d. Opioids should not be used for labor pain.

Contraindications:

1. Altered Mental Status
2. Hypotension
3. Respiratory Depression

Expected effects:

1. Decreased pain
2. Decreased agitation

Side effects:

1. Drowsiness
2. Hypotension
3. Respiratory Depression
4. Vomiting

Dosing: CHEST PAIN/ACUTE CORONARY SYNDROME

Indication: Chest pain in which nitroglycerin is contraindicated due to erectile dysfunction medication or suspected cardiac chest pain is refractory to nitroglycerin.

Adults administer 1 mcg/kg IV/IO/IM/IN dosage rounded as per below:

1. Up to and including 25 kg - administer 25 mcg
2. 26-50 kg – administer 50 mcg

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3. 51-75 kg - administer 75 mcg
4. 76 kg and above – administer 100 mcg
5. IV/IO/IN may repeat one-time, total dose may not exceed 200 mcg
6. If IM administration may NOT repeat

Dosing: PAIN MANAGEMENT

Indication: Patient is unable to tolerate ketamine, or ketamine is not available, and the patient has significant pain (described as 7 or greater on the Wong Pain Scale).

Adults (patients > 14 years of age), administer 1 mcg/kg IV/IO/IM/IN dosage, rounded as per below:

1. Up to and including 25 kg - administer 25 mcg
2. 26-50 kg – administer 50 mcg
3. 51-75 kg - administer 75 mcg
4. 76 kg and above – administer 100 mcg
5. IV/IO/IN may repeat one-time, total dose may not exceed 200 mcg. Interval between doses is minimally 10 minutes.
6. If IM administration may NOT repeat

Pediatrics administer:

1. Fentanyl according to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Fentanyl 1 mcg/kg IV/IO/IM/IN
 - b. May repeat IV/IO/IN one time. Interval between doses is minimally 10 minutes.
 - c. If IM administration may NOT repeat

Dosing: PATIENT PROCEDURAL SEDATION

Adults administer:

1. Fentanyl 50-100 mcg (1 mcg/kg) IV/IO titrated slowly (IN, if available). May repeat every 4 minutes to a maximum of 3 mcg/kg.
- 2.

Pediatrics administer:

1. Fentanyl according to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Fentanyl 1 mcg/kg IV/IO titrated slowly (IN, if available). May repeat every 5 minutes to a maximum of 3 mcg/kg.

Used in the Following Protocols

Chest Pain/Acute Coronary Syndrome (Section 5 Adult Cardiac)

Pain Management (Section 7 Procedures)

Patient Procedure Sedation (Section 7 Procedures)

MCA Name Tri-County Emergency Medical Control Authority

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MDHHS Reviewed 2026

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Section: 9-25R

Glucagon

Pharmacological Category: Antidote; Hypoglycemia

Routes: IM – injectable formulation or IN – intranasal formulation

Indications:

1. Unable to obtain IV access and dextrose is indicated

Contraindications:

1. Adrenal gland tumor

Expected effects:

1. Increased blood glucose

Side effects:

1. Nausea
2. Vomiting

NOTE:

1. Use ONLY intranasal formulation for IN administration
2. Use ONLY injectable formulation for IM administration

Dosing: ADULT ALTERED MENTAL STATUS

Indication: Patient is demonstrating signs of hypoglycemia, blood glucose is < 60 mg/dL and unable to start IV.

Adults administer:

1. Glucagon 1 mg IM (injectable formulation) OR 3 mg IN (intranasal formulation)

Dosing: ADULT SEIZURE

Indication: Seizure patient with blood glucose < 60 mg/dL and unable to start IV.

Adults administer:

1. Glucagon 1 mg IM (injectable formulation) OR 3 mg IN (intranasal formulation)

Dosing: PEDS ALTERED MENTAL STATUS

Indication: Pediatric patient demonstrating signs of hypoglycemia, unable to start IV and blood glucose is <60 mg/dL

Pediatrics administer:

1. Glucagon according to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Pediatrics age 5 or greater:
 - i. Glucagon 1 mg IM (injectable formulation)
 - ii. Glucagon 3 mg IN (intranasal formulation)

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- b. Pediatrics less than age 5:
 - i. Glucagon 0.5 mg IM (injectable formulation)
 - ii. Glucagon IN DO NOT ADMINISTER

Dosing: PEDS SEIZURE

Indication: Pediatric seizure patient, unable to start IV, and blood glucose is <60 mg/dL:

Pediatrics administer:

- 1. Glucagon according to MI MEDIC
- 2. If MI MEDIC is not available administer:
 - a. Pediatrics age 5 or greater:
 - i. Glucagon 1 mg IM (injectable formulation)
 - ii. Glucagon 3 mg IN (intranasal formulation)
 - b. Pediatrics less than age 5:
 - i. Glucagon 0.5 mg IM (injectable formulation)
 - ii. Glucagon IN DO NOT ADMINISTER

Used in the Following Protocols

Altered Mental Status (Section 3 Adult Treatment)

Seizures (Section 3 Adult Treatment)

Pediatric Altered Mental Status (Section 4 Obstetrics and Pediatrics)

Pediatric Seizures (Section 4 Obstetrics and Pediatrics)

Initial Date: 07/19/2023

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Section: 9-26R

Hydroxocobalamin

Pharmacological Category: Antidote; Vitamin, Water Soluble

Routes: IV/IO

Indications:

1. Known or suspected cyanide poisoning.
2. Smoke inhalation with altered mental status and/or moderate to severe respiratory distress.

Precautions:

1. Numerous drugs and blood products are not compatible with hydroxocobalamin.
2. Push over 15 minutes
3. Hydroxocobalamin is incompatible with dopamine and fentanyl. Must flush line between medications.

Expected effects:

1. Increased blood glucose

Side effects:

1. Nausea
2. Vomiting
3. Abdominal pain
4. Red colored urine, skin, mucus membranes
5. Rash

Notes:

1. Hydroxocobalamin comes as a powder to be reconstituted prior to administration and is available as Cyanokit®
2. Reconstitute Cyanokit® (5 gm or 2.5 gm vial) for injection using sterile transfer spike with diluent (0.9%NaCl).
 - a. The line on each vial label represents the volume of diluent
 - b. Repeatedly inverted or rock vial (do not shake) prior to infusion
 - i. 5 gm bottle invert/rock for at least 60 seconds
 - ii. 2.5 gm bottle invert/rock for at least 30 seconds
 - c. Visually inspect solution - should be dark red with no particulates
 - i. Discard if visible particulates and/or not dark red

Initial Date: 07/19/2023

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Section: 9-26R

Dosing: CYANIDE EXPOSURE

Indication: Patients exposed to cyanide that demonstrate symptoms as outlined in the above protocol.

Adults administer:

1. Hydroxocobalamin 5 gm IV/IO slow IV push over 15 minutes. May repeat 5 gm dose infusion. Infuse over 15 minutes for sever cases, slower infusion, up to 2 hours, for less severe cases. Total max dose 10 gm.

Pediatrics administer:

1. Hydroxocobalamin according to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. Hydroxocobalamin according to chart below
 - b. If chart below is not available administer Hydroxocobalamin 70 mg/kg IV/IO slow IV push over 15 minutes.

Cyanokit® Administration for Suspected Cyanide Poisoning **(including serious smoke inhalation)**

Weight	Age	Cyanokit® Dose ¹ (~70 mg/kg +/-) IV/IO	Cyanokit® Volume to Administer ² IV/IO
3-5 kg (6-11 lbs)	0-2 months	250 mg	10 mL ³
6-7 kg (13-16 lbs)	3-6 months	500 mg	20 mL ³
8-9 kg (17-20 lbs)	7-10 months	625 mg	25 mL ³
10-11 (21-25 lbs)	11-18 months	750 mg	30 mL ³
12-14 kg (26-31 lbs)	19-35 months	900 mg	36 mL ³
15-18 kg (32-40 lbs)	3-4 years	1100 mg	44 mL ³
19-23 kg (41-51)	5-6 years	1500 mg	60 mL ³
24-29 kg (52-64)	7-9 years	1750 mg	70 mL ³
30-36 kg (65-79 lbs)	10-14 years	2500 mg	100 mL ⁴ (1/2 bottle)
Adult 37 40 kg (80-88 lbs)	>14 years	3000 mg	120 mL ⁴
Adult 41 49kg (89-108 lbs)	>14 years	3500 mg	140 mL ⁴
Adult > or 50 kg (> or 109 lbs)	>14 years	5000 mg	200 mL ⁴ (full bottle)

¹The safety and efficacy in pediatrics has not been established, ²Administer slowly over 15 minutes.

³Push slowly over 15 minutes, ⁴Infuse over 15 minutes

Used in the Following Protocols

Cyanide Exposure (Section 10 Special Operations)

MCA Name Tri-County Emergency Medical Control Authority

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Section: 9-27R

Ibuprofen

Pharmacological Category: Analgesic, Nonopioid; Nonsteroidal Anti-inflammatory Drug (NSAID)

Routes: PO

Indications:

1. Mild pain
2. Fever

Contraindications:

1. Active bleeding
2. <6 months of age
3. Pregnancy

Precautions:

1. Has received ibuprofen (i.e., Motrin/Advil) or any medication containing ibuprofen (e.g., cold medication) in the last 6 hours and is alert.
2. Patient must be alert enough to take PO medication.

Expected effects:

1. Fever reduction
2. Pain relief

Side effects:

1. Nausea/vomiting
2. Abdominal pain
3. Heartburn

Dosing: ADULT FEVER

Indication: Fever

Adults administer:

1. Ibuprofen 400 mg PO.

Dosing: PEDIATRIC FEVER

Indication: Fever

Pediatrics over 6 months old administer:

1. Ibuprofen according to MI MEDIC
 - a. If MI MEDIC is not available administer ibuprofen according to dosing chart below.

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Dosing: PAIN MANAGEMENT

Indication: For mild to moderate pain (described as 1-6 on the Wong Pain Scale)

Adults administer:

1. Ibuprofen 400 mg PO.

Pediatrics (patients greater than 6 months of age) administer:

1. Ibuprofen according to MI MEDIC
2. If MI MEDIC is not available administer ibuprofen according to chart below

Children's Ibuprofen Elixir Dosing Table		
Child's Weight	Child's Age	Ibuprofen 100 mg/5mL
3-5 kg (6-12 lbs.)	0-2 mos.	DO NOT GIVE
6-7 kg (13-16 lbs.)	3-6 mos.	DO NOT GIVE
8-9 kg (17-20 lbs.)	7-10 mos.	4 mL (80 mg)
10-11 kg (21-25 lbs.)	11-18 mos.	5 mL (100 mg)
12-14 kg (26-31 lbs.)	19 mos.-35 mos.	6 mL (120 mg)
15-18 kg (32-40 lbs.)	3-4 yrs.	7.5 mL (150 mg)
19-23 kg (41-51 lbs.)	5-6 yrs.	9.5 mL (190 mg)
24-29 kg (52-64 lbs.)	7-9 yrs.	13 mL (260 mg)
30-36 kg (65-79 lbs.)	10-14 yrs.	15 mL (300 mg)

Used in the Following Protocols

Adult Fever (Section 2 Adult Treatment)

Pediatric Fever (Section 4 Obstetrics and Pediatrics)

Pain Management (Section 7 Procedures)

Initial Date: 07/19/2023
Revised Date: 08/11/2023

Section: 9-28R

Ipratropium Bromide

Pharmacological Category: Anticholinergic Agent

Routes: Nebulized

Indications:

1. Wheezing
2. Airway Constriction

Contraindications:

1. Hypersensitivity to atropine or its derivatives

Expected effects:

1. Decreased wheezing
2. Decreased respiratory distress

Notes: May be administered in conjunction with albuterol 2.5 mg/3 mL NS as a 'Duoneb'.

Side effects:

1. Palpitations
2. Dry Mouth
3. Anxiety

Dosing: ANAPHYLAXIS ALLERGIC REACTION

Indication: Continued wheezing and/or airway constriction after administration of nebulized albuterol.

Adults and pediatrics administer:

1. Ipratropium 500 mcg/2.5 mL NS nebulized

Dosing: ADULT RESPIRATORY DISTRESS

Indication: Continued wheezing and/or airway constriction after administration of nebulized albuterol.

Adults administer:

1. Ipratropium 500 mcg/2.5 mL NS nebulized

Used in the Following Protocols

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

Respiratory Distress (Section 3 Adult Treatment)

Initial Date: 07/19/2023
Revised Date: 02/10/2026

Section: 9-29R

Ketamine

Pharmacological Category: Antidepressant; General Anesthetic

Routes: IV/IO/IM/IN

Indications:

1. Pain Management
2. Sedation

Precautions:

1. Administration of Ketamine IV for pain management should be diluted to prevent ketamine dissociation.

Contraindications:

1. Pregnancy
2. Chest Pain/Acute Coronary Syndrome

Expected effects:

1. Sedation
2. Decreased agitation
3. Decreased pain

Side effects:

1. Nausea/vomiting
2. Nystagmus
3. Dysphoria
4. Laryngospasm/Stridor
5. Increased oral secretions
6. Changes to heart rates (tachycardia or bradycardia)

Notes:

1. IM Ketamine has a 3–5-minute onset
2. When diluting Ketamine
 - a. Mix the patient specific dose into 100 mL NS and administer slow infusion over 5-10 minutes.
3. Ketamine is an MCA optional medication and may not be available.

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Dosing: HYPERACTIVE DELIRIUM SYNDROME WITH SEVERE AGITATION

Indication: Patients demonstrating signs and symptoms of hyperactive delirium syndrome with severe agitation that are in imminent physical threat to themselves and/or personnel.

Adults administer:

1. Ketamine 4 mg/kg IM. Maximum single dose 500 mg

Dosing: PAIN MANAGEMENT

Indication: For patients with severe pain (described as 7 or greater on the Wong Pain Scale)

Adults administer:

1. Ketamine 0.2 mg/kg IV/IO (diluted) slow infusion. Maximum single dose 25 mg.
2. Ketamine 0.5 mg/kg IN (undiluted). Maximum single dose 50 mg.
3. May repeat after 10 minutes.

Pediatrics

1. Ketamine according to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Pediatrics (> 6 years of age and $\leq$ 14 years of age):
 - i. Ketamine 0.2 mg/kg IV/IO (diluted) slow infusion, maximum single dose 25 mg
 - ii. Ketamine 0.5 mg/kg IN (undiluted) maximum single dose 50 mg
 - iii. May repeat one time after a minimum of 10 minutes.
 - b. Pediatrics (> 6 months of age and $\leq$ 6 years of age)
 - i. 0.5 mg/kg IN (undiluted)
 - ii. May repeat one time after a minimum of 10 minutes.

Dosing: PATIENT PROCEDURAL SEDATION (Adult and Pediatric)

Indication: For proper sedation of patients requiring a painful medical procedure.

1. Ketamine 1.5 mg/kg (max dose 150 mg) IV/IO/(IN if available) or 4 mg/kg IM (max dose 400 mg) titrated slowly to sedation.
2. NOT for use with CPAP/HFNO sedation.

Used in the Following Protocols

Hyperactive Delirium Syndrome with Severe Agitation (Section 3 Adult Treatment)

Pain Management (Section 7 Procedures)

Patient Procedural Sedation (Section 7 Procedures)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-30R

Ketorolac

Pharmacological Category: Analgesic, Nonopioid; Nonsteroidal Anti-inflammatory Drug (NSAID)

Routes: IM/IV

Indications:

1. Pain management

Contraindications:

1. Allergies to NSAIDs
2. Active labor or women who are breastfeeding
3. Renal impairment
4. Bleeding or high risk of bleeding
5. Pregnancy

Expected effects:

1. Pain Relief

Side effects:

1. Nausea/vomiting
2. Bloating

Dosing: PAIN MANAGEMENT

Adults administer:

1. Ketorolac 15 mg IM/IV

Pediatrics (patients over 5 years of age) administer:

1. Ketorolac according to MI MEDIC
2. If MI MEDIC is not available administer:
 - a. Ketorolac 0.5 mg/kg IM/IV. Max dose 15 mg.

Used in the Following Protocols

Pain Management (Section 7 Procedures)

Initial Date: 07/19/2023

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Section: 9-31R

Lidocaine

Pharmacological Category: Antiarrhythmic, anesthetic

Routes: IV/IO

Indications:

1. Cardiac arrest from VF/VT
2. Wide complex tachycardia
3. As an anesthetic agent for IO establishment

Contraindications:

1. Bradycardia or heart block

Expected effects:

1. Increased VF threshold
2. Decreased ventricular irritability
3. Decreased pain with infusion

Dosing: ADULT CARDIAC ARREST

Indication: Cardiac arrest V-Fib, pulseless V-Tach, or multiple AED defibrillations

Adults administer:

1. Lidocaine 1 mg/kg IV/IO. May repeat 0.5 mg/kg every 5-10 minutes. Total dose of 3 mg/kg

Dosing: ADULT TACHYCARDIA

Indication: Regular Wide QRS rhythm (i.e., V-Tach, SVT/A-Flutter with aberrancy)

Adults administer:

1. Lidocaine 1 mg/kg IV. Repeat lidocaine 0.5 -1.0 mg/kg IV push every 5 - 10 minutes to a maximum of 3 mg/kg.

Dosing: PEDIATRIC CARDIAC ARREST

Indication: Cardiac arrest V-Fib, pulseless V-Tach, or multiple AED defibrillations

Pediatrics administer:

1. Lidocaine according to MI MEDIC cards
2. If MI MEDIC cards are not available administer Lidocaine 1 mg/kg IV/IO. May repeat 0.5 mg/kg twice at 5-10 minute intervals. Maximum 3 doses total

Dosing: PEDIATRIC TACHYCARDIA

Indication: For recurrent or refractory wide complex – unstable tachycardia

Pediatrics administer:

1. Lidocaine according to MI MEDIC cards
2. If MI MEDIC cards are not available administer Lidocaine 1 mg/kg IV/IO. May repeat 0.5 mg/kg twice at 5-10 minute intervals. Maximum 3 doses total

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Dosing: VASCULAR ACCESS & IV FLUID THERAPY

Indication: Conscious patients experiencing pain with IO infusion

Adults administer:

1. Lidocaine 2%, 20 mg IO

Pediatrics administer:

1. Lidocaine 0.5 mg/kg, IO maximum dose of 20 mg

Used in the Following Protocols

General Cardiac Arrest (Section 5 Adult Cardiac)

Tachycardia (Section 5 Adult Cardiac)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Pediatric Tachycardia (Section 6 Pediatric Cardiac)

Vascular access & IV Fluid Therapy (Section 7 Procedures)

Initial Date: 07/19/2023

Revised Date:

Section: 9-32R

Magnesium Sulfate

Pharmacological Category: Antiseizure Agent, Electrolyte Supplement

Indications:

1. Cardiac: Torsades de Pointes
2. VF/VT in hypomagnesemia
3. Pre-eclampsia
4. Eclamptic seizures
5. Refractory status asthmaticus

Precautions:

1. Magnesium Sulfate is diluted for applications in these protocols

Expected effects:

1. Seizure cessation
2. Decreased respiratory distress

Side effects:

1. Respiratory depression
2. Hypotension
3. Asystole
4. Burning in IV site for conscious patients

Best Practice for Administering Magnesium Sulfate

1. Magnesium Sulfate dose added to 100 to 250 mL of NS and infusing over approximately 10 minutes.

Notes:

1. Magnesium Sulfate for Preeclampsia/Eclampsia can be administered prior, during, or up to 6 weeks post childbirth.
2. The dosing for preeclampsia and eclampsia are both 4 gm (see treatment protocol for pre/post radio requirements).

Dosing: ADULT RESPIRATORY DISTRESS

Indication: Status asthmaticus

Adults administer:

1. Magnesium Sulfate 2 gm slow IV (preferably added to 100-200 mL NS bag over 10 minutes).

Dosing: ADULT SEIZURES

Indication: Eclamptic seizure

Adults administer:

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1. Magnesium Sulfate 4 gm over 10 minutes IV/IO until seizure stops (preferably added to 100-200 mL NS bag over 10 minutes).

Dosing: CHILDBIRTH & RELATED OBSTETRICAL EMERGENCIES

Indication: Preeclampsia or Eclamptic Seizure

Adults administer:

1. Magnesium Sulfate 4 gm over 10 minutes IV/IO until seizure stops (preferably added to 100-200 mL NS bag over 10 minutes).

Dosing: ADULT CARDIAC ARREST

Indications: Suspected torsades de pointes

Adults administer:

1. Magnesium Sulfate 2 gm IV/IO

Used in the Following Protocols:

Respiratory Distress (Section 3 Adult Treatment)

Seizures (Section 3 Adult Treatment)

Childbirth and Obstetrical Emergencies (Section 4 Obstetrics and Pediatrics)

General Cardiac Arrest (Section 5 Adult Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-33R

Methylprednisolone

Pharmacological Category: Corticosteroid, Systemic

Routes: IV/IO/IM

Indications:

1. Allergic reactions
2. Airway inflammation
3. Reactive airway disease
4. Acute adrenal insufficiency

Contraindications:

1. Hypersensitivity to methylprednisolone (or similar)

Expected effects:

1. Decreased inflammation

Side effects:

1. Dizziness
2. Nausea/vomiting

Notes:

1. Prednisone PO is preferred over methylprednisolone for respiratory distress however prednisone it is not a required medication, and the PO tablet has restrictions (tablet cannot be cut, cannot be administered to children ≤ 6 years of age, cannot be administered to patient that is unable to safely take PO medication).

Dosing: ANAPHYLAXIS ALLERGIC REACTION

Indication: If patient is symptomatic of an allergic reaction but not in a severe allergic reaction or anaphylaxis OR after epinephrine administration

Adults administer:

1. Methylprednisolone 125 mg IV/IO/IM

Pediatrics administer:

1. Methylprednisolone according to MI MEDIC cards.
2. If MI MEDIC cards are not available administer Methylprednisolone 2 mg/kg IV/IO/IM. Maximum dose 125 mg.

Dosing: ADRENAL CRISIS

Indication: Patients with a known history of adrenal insufficiency, experiencing signs of crisis.

Adults administer:

1. Methylprednisolone 125 mg IV/IO/IM

Pediatrics administer:

1. Methylprednisolone according to MI MEDIC cards.

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2. If MI MEDIC cards are not available administer Methylprednisolone 2 mg/kg IV/IO/IM.
Maximum dose 125 mg

Dosing: ADULT RESPIRATORY DISTRESS

Indication: Respiratory distress patients with wheezing or diminished breath sounds due to asthma or COPD.

Adults administer:

1. Methylprednisolone 125 mg IV/IO/IM

Dosing: PEDIATRIC RESPIRATORY DISTRESS, FAILURE OR ARREST

Indication: Pediatric respiratory distress patients with suspected bronchospasm (wheezing)

Pediatrics administer:

1. Methylprednisolone according to MI MEDIC cards.
2. If MI MEDIC cards are not available administer Methylprednisolone 2 mg/kg IV/IO/IM.
Maximum dose 125 mg

Used in the Following Protocols:

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

Adrenal Crisis (Section 1 General Treatment)

Respiratory Distress (Section 3 Adult Treatment)

Pediatric Respiratory Distress, Failure or Arrest (Section 4 Obstetrics and Pediatrics)

Initial Date: 07/19/2023

Revised Date:

Section: 9-34R

Midazolam

Pharmacological Category: Antiseizure Agent, Benzodiazepine; Benzodiazepine

Routes: IV/IO/IM/IN

Indications:

1. Adult or pediatric seizures
2. Procedural Sedation
3. Severe agitation that prohibits essential assessment and/or treatment

Contraindications:

1. Shock

Precautions:

1. Consider lower range of dosing for Geriatric patients

Expected effects:

1. Seizure cessation
2. Sedation

Side effects:

1. Respiratory depression
2. Hypotension

Dosing: ADULT SEIZURES

Indication: Actively seizing adult patient.

Adults administer:

1. Midazolam 10 mg IM prior to IV start
2. If IV established prior to the need for medication administration, midazolam 5 mg IV/IO
3. If seizure persists repeat midazolam 5mg IV/IO/IM/IN

Dosing: HYPERACTIVE DELIRIUM SYNDROME

Indication: Patients who are uncontrollably agitated despite de-escalation techniques

Adults administer:

1. Midazolam 10 mg IM/IN

Dosing: PEDIATRIC SEIZURES

Indication: Actively seizing pediatric patient.

Pediatrics administer:

1. Midazolam according to MI MEDIC cards
2. If MI MEDIC cards are not available administer:
 - a. Midazolam 0.1 mg/kg IM, maximum individual dose 10 mg.

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- b. If IV established prior to the need for medication administration, administer midazolam 0.05 mg/kg IV/IO. Maximum single dose of 5 mg.
- c. If seizures persisting 10 minutes after initial dose (and correction of low blood glucose if applicable) repeat midazolam one time
 - i. Midazolam 0.1 mg/kg IM. Maximum single dose 10 mg
 - OR**
 - ii. If IV available midazolam 0.05 mg/kg IV/IO maximum single dose of 5 mg.

Dosing: PATIENT RESTRAINT

Indication: when soft restraint placement alone would pose a safety risk or is ineffective in calming the patient

Adults administer:

1. Midazolam 0.1 mg/kg IM/IN. Maximum dose of 10 mg

Pediatrics administer:

1. Midazolam according to MI MEDIC cards
2. If MI MEDIC cards are not available administer Midazolam 0.1 mg/kg IM. Maximum single dose 5mg.

Dosing: PATIENT PROCEDURAL SEDATION

Indication: Sedation titrated to minimum amount necessary for patients requiring a painful medical procedure (i.e., cardioversion, transcutaneous pacing), post intubation sedation, CPAP, or HFNC.

Adults administer:

1. Midazolam 1-5 mg (maximum dose of 0.05 mg/kg) IV/IO titrated slowly or IN. May repeat once in 5 minutes. Maximum total dose 0.1 mg/kg. Titrate to minimum amount necessary.

Pediatrics administer:

1. Midazolam according to MI MEDIC cards
2. If MI MEDIC cards are not available administer Midazolam 0.05 mg/kg IV/IO titrated slowly or IN. May repeat once in 5 minutes to a maximum of 0.1 mg/kg. Titrate to minimum amount necessary.

Used in the Following Protocols:

Seizures (Section 3 Adult Treatment)

Hyperactive Delirium Syndrome (Section 3 Adult Treatment)

Pediatric Seizures (Section 4 Obstetrics and Pediatrics)

Patient Restraint (Section 7 Procedures)

Patient Procedure Sedation (Section 7 Procedures)

Initial Date: 07/19/2023
Revised Date: 02/10/2026

Section: 9-35R

Morphine

Pharmacological Category: Analgesic, Opioid

Routes: IV/IO/IM

Indications:

1. Pain

Precautions:

1. Pregnant or suspected pregnant patients
 - a. Optimize non-pharmacologic interventions as directed in the **Pain Management Protocol**.
 - b. For mild to moderate pain, use acetaminophen as directed in the **Pain Management Protocol**.
 - c. For severe pain (greater than 7 on the Wong Pain Scale), administer opioid as directed in the **Pain Management Protocol**. Administer IV/IO slowly, titrating to lowest dose needed to reduce pain score to less than 7.
 - d. Opioids should not be used for labor pain.

Contraindications:

1. Hypotension
2. Children $\leq$ 18 months old

Expected effects:

1. Decreased pain

Side effects:

1. Respiratory depression
2. Hypotension

Dosing: PAIN MANAGEMENT

Adults administer:

1. Morphine 0.1 mg/kg IV/IO/IM. Maximum single dose 5 mg.
 - a. IV/IO may repeat three times (total of four doses). Total dose may not exceed 20 mg. Interval between doses is minimally 10 minutes.
 - b. If IM administration may NOT repeat.

Pediatrics (patients > 18 months of age) administer:

1. Morphine according to MI MEDIC
2. When MI MEDIC is not available administer Morphine 0.1 mg/kg IV/IO/IM. Maximum single dose 5 mg.
 - a. IV/IO may repeat three times (total of four doses). Total dose may not exceed 20 mg. Interval between doses is minimally 10 minutes.

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MORPHINE

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- b. If IM administration may NOT repeat.
- c. Do NOT administer to children < 18 months of age.

Used in the Following Protocol(s):

Pain Management (Section 7 Procedures)

Initial Date: 07/19/2023

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Naloxone

Pharmacological Category: Antidote; Opioid Antagonist

Indications for administration:

1. Known opioid overdose WITH respiratory depression
2. Respiratory depression or arrest of unknown origin (per treatment protocol)

Precautions:

1. Rapid IV push may cause agitation.

Expected effects:

1. Increased mental status
2. Increased respiratory drive

Side effects:

1. Agitation
2. Nausea/vomiting

Dosing: OPIOID OVERDOSE TREATMENT AND PREVENTION

Indication: Decreased level of consciousness associated with respiratory depression from Opioid Overdose

Adults administer:

1. Narcan® Nasal Spray 4 mg in one nostril. May repeat one time in 3-5 minutes in opposite nostril if effective respirations not restored.

OR

2. Naloxone prefilled 2 mg/2 mL IN via Atomizer. Half dose in each nostril. May repeat one time in 3-5 minutes if effective respirations not restored.

OR

3. Naloxone 2 mg IM or slow IV push titrating to improvement in respiratory status. IV naloxone may be repeated as needed every 3-5 minutes.

Pediatrics administer:

1. According to MI MEDIC cards administer naloxone prefilled 2 mg/2 mL IN via atomizer. Half dose each nostril.
2. If MI MEDIC cards are not available administer naloxone prefilled 2 mg/2 mL IN via atomizer. Half dose each nostril.
 - a. Age 36 months/3 years of age or older: 2mL (2 mg)
 - b. Age 19-35 months old: 1.5 mL (1.5 mg)
 - c. Age 3-18 months old: 1 mL (1.0 mg)
 - d. Age 0-2 months old: 0.5 mL (0.5 mg)

OR

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3. According to MI MEDIC cards administer naloxone IM or slow IV push titrating to improvement in respiratory status. IV naloxone may be repeated as needed every 3-5 minutes.
4. If MI MEDIC cards are not available administer Naloxone 0.1 mg/kg IM or slow IV push titrating to improvement in respiratory status. IV naloxone may be repeated as needed every 3-5 minutes

Dosing: ADULT CARDIAC ARREST

Indication: Adult cardiac arrest with known or highly suspected opioid overdose

Adults administer:

1. Naloxone 2 mg IV/IO or 2-4 mg IN

Used in the Following Protocols:

Opioid Overdose Treatment and Prevention (Section 1 General Treatment)

General Cardiac Arrest (Section 5 Adult Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-37R

Nitroglycerin

Pharmacological Category: Antianginal Agent; Vasodilator

Routes: SL

Indications:

1. Cardiac pain
2. Pulmonary edema

Contraindications:

1. Use of erectile dysfunction medications in previous 48 hours.
2. Use of medication to treat pulmonary hypertension in previous 48 hours
3. BP < 120 mm Hg without IV access
4. BP < 100 mm Hg with IV access

Expected effects:

1. Decreased blood pressure
2. Relief of chest pain

Side effects:

1. Headache
2. Flushing
3. Hypotension

Dosing: PULMONARY EDEMA/CARDIOGENIC SHOCK

Indication: Pulmonary edema

Adults administer:

1. Nitroglycerin 0.4 mg SL (without IV access) maximum of 3 doses.
2. Nitroglycerin 0.4 mg SL (with IV access) every 3-5 minutes

Dosing: CHEST PAIN/ACUTE CORONARY SYNDROME

Indication: Cardiac chest pain

Adults administer:

1. Nitroglycerin 0.4 mg SL (without IV access) maximum of 3 doses.
2. Nitroglycerin 0.4 mg SL (with IV access) every 3-5 minutes

Used in the Following Protocols:

Pulmonary Edema/Cardiogenic Shock (Section 5 Adult Cardiac)

Chest Pain/Acute Coronary Syndrome (Section 5 Adult Cardiac)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-38R

Ondansetron

Pharmacological Category: Antiemetic

Indications:

1. Nausea and vomiting

Routes: IV/IM; ODT (for patients $\geq$ 30 kg)

Contraindications:

1. Patients with Phenylketonuria (PKU)

Precautions:

1. Do not administer ODT to patients that are actively vomiting

Expected effects:

1. Diminished nausea

Side effects:

1. Headache
2. Dry mouth
3. Drowsiness

Notes:

1. Orally Disintegrating Tablet (ODT) is an MCA optional medication and may not be available.

Dosing: NAUSEA & VOMITING

Indication: Nausea & vomiting

Adults > 30 kg administer:

1. Ondansetron ODT 4mg one time if not actively vomiting and ODT is available.

Adults administer:

2. Ondansetron 4mg IV/IM if patient is actively vomiting, vomited post ODT administration, or ODT is not available.

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3. May administer a second dose of ondansetron 4 mg IV/IM only, 15 minutes after first dose IV/IM if nausea/vomiting persists. Total dose (including ODT) not to exceed 8 mg.

Pediatrics $\geq$ 30 kg administer:

1. Ondansetron ODT 4mg one time if not actively vomiting and ODT is available.

Pediatrics administer:

2. Ondansetron 0.1 mg/kg IV/IM (max dose 4 mg) if patient is actively vomiting, vomited post ODT administration, or ODT is not available.
3. May administer a second dose of ondansetron 0.1 mg/kg (max dose 4 mg) IV/IM only, 15 minutes after first dose IV/IM if nausea/vomiting persists. Total dose (including ODT) not to exceed 8 mg.

Used in the Following Protocol(s):

Nausea & Vomiting (Section 1 General Treatment)

Initial Date: 07/19/2023

Revised Date:

Section: 9-39R

Pralidoxime

Pharmacological Category: Cholinesterase reactivator

Routes: IV/IM

Indications:

1. Exposure to organophosphate or nerve agents

Expected effects:

1. Decrease in symptoms

Side effects:

1. Blurred vision
2. Headache
3. Dizziness
4. Nausea

Notes:

1. This medication may be part of a Nerve Agent (NA) Antidote kit.
2. When not part of an NA kit, 600 mg pralidoxime (along with 2 mg Atropine) will be administered in place of each NA kit that was to be administered.

Dosing: NERVE AGENT/ORGANOPHOSPHATE PESTICIDE EXPOSURE

Indication: Symptomatic nerve agent or organophosphate pesticide exposure when a NA Antidote Kt is not available.

Adults and Pediatrics administer:

1. Pralidoxime 600 mg IV/IM for every one (1) NA Kit as required on Chart below.

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	Clinical Findings	Signs/Symptoms	Required Conditions	NA Kits To Be Delivered
SELF-RESCUE	Threshold Symptoms	• Dim vision • Increased tearing • Runny nose • Nausea/vomiting • Abdominal cramps • Shortness of breath	Threshold Symptoms -and- Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit (self-rescue)
ADULT PATIENT > 8 years of age	Mild Symptoms and Signs	• Increased tearing • Increased salivation • Dim Vision • Runny nose • Sweating • Nausea/vomiting • Abdominal cramps • Diarrhea	 Medical Control Order	1 NA Kit
	Moderate Symptoms and Signs	• Constricted pupils • Difficulty breathing • Severe vomiting	Constricted Pupils	2 NA Kits
	Severe Signs	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Constricted Pupils	3 NA Kits (If 3 NA Kits are used, administer 1 st dose of available benzodiazepine)

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MEDICATION SECTION
PRALIDOXIME

Initial Date: 07/19/2023

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PEDIATRIC < 8 years of age	Pediatric Patient with Non-Severe Signs/Symptoms	<i>Mild or moderate symptoms as above</i>	Threshold Symptoms -and- Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit
	Pediatric Patient with Severe Signs/Symptoms	- Constricted pupils - Unconsciousness - Seizures - Severe difficulty breathing	Severe breathing difficulty Weakness	1 NA Kit

Used in the Following Protocols

Nerve Agent/Organophosphate Pesticide Exposure (Section 10 Special Operations)

MCA Name Tri-County Emergency Medical Control Authority

MCA Board Approval 2/12/24

MCA Implementation Date 3/25/24

MDHHS Approval: 7/19/23

MDHHS Reviewed 2023

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Initial Date: 07/19/2023

Revised Date:

Section: 9-40R

Prednisone

Pharmacological Category: Corticosteroid, Systemic

Routes: PO

Indications:

1. Allergic Reaction
2. Inflammatory respiratory issues

Contraindications:

1. Hypersensitivity to steroids
2. Known systemic fungal infections
3. Children $\leq$ 6 years of age
4. Inability to take PO medication

Expected effects:

1. Decreased inflammation

Side effects:

1. Retention of fluids

Notes:

1. Do not cut prednisone tablets

Dosing: ANAPHYLAXIS ALLERGIC REACTION

Indication: If patient is symptomatic of an allergic reaction but not in a severe allergic reaction or anaphylaxis OR after epinephrine administration.

Adults administer:

1. Prednisone tablet 50 mg PO

Pediatrics > 6 years of age administer:

1. Prednisone tablet 50 mg PO

Dosing: ADRENAL CRISIS

Indication: Patients with a known history of adrenal insufficiency, experiencing signs of crisis.

Adults administer:

1. Prednisone tablet 50 mg PO

Pediatrics > 6 years of age administer:

1. Prednisone tablet 50 mg PO

Initial Date: 07/19/2023

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Dosing: ADULT RESPIRATORY DISTRESS

Indication: Respiratory distress patients with wheezing or diminished breath sounds due to asthma or COPD

Adults administer:

1. Prednisone tablet 50 mg PO

Dosing: PEDIATRIC RESPIRATORY DISTRESS, FAILURE, OR ARREST

Indication: Pediatric respiratory distress patients with suspected bronchospasm (wheezing)

Pediatrics > 6 years of age administer:

1. Prednisone tablet 50 mg PO

Used in the Following Protocols

Anaphylaxis/Allergic Reaction (Section 1 General Treatment)

Adrenal Crisis (Section 1 General Treatment)

Respiratory Distress (Section 3 Adult Treatment)

Pediatric Respiratory Distress, Failure or Arrest (Section 4 Obstetrics and Pediatrics)

Initial Date: 07/19/2023
Revised Date: 12/10/2025

Section: 9-41R

Sodium Bicarbonate

Pharmacological Category: Alkalinizing Agent; Antacid; Electrolyte Supplement,

Indications:

1. Cardiac arrest in dialysis patient with suspected hyperkalemia
2. Symptomatic tricyclic antidepressant overdose
3. Hyperkalemia

Contraindications:

1. Severe pulmonary edema
2. Known Alkalosis

Precautions:

1. Must flush IV line between medications
 - a. Calcium and epinephrine are not compatible with sodium bicarbonate
2. Administer slowly

Dosing: POSIONING/OVERDOSE/ENVIRONMENTAL EXPOSURE GENERAL CRUSH INJURY

Indication: symptomatic tricyclic antidepressant ingestions (tachycardia, wide complex QRS)

Adults administer:

1. Sodium bicarbonate 50 mEq IV. Repeat as needed

Pediatrics administer:

1. Sodium bicarbonate according to MI MEDIC cards.
2. If MI MEDIC cards are not available administer Sodium bicarbonate 1 mEq/kg IV.
Repeat as needed

Dosing: ADULT CARDIAC ARREST

Indications: Cardiac arrest with known or highly suspected tricyclic antidepressant overdose or known or highly suspected hyperkalemia (e.g., dialysis patient, EKG changes)

Adults administer:

1. Sodium bicarbonate 1 mEq/kg IV/IO

Dosing: PEDIATRIC CARDIAC ARREST

Indication: Cardiac arrest with hyperkalemia (renal failure)

Pediatrics administer:

1. Sodium bicarbonate according to MI MEDIC cards
2. If MI MEDIC cards are not available administer Sodium bicarbonate 1 mEq/kg IV/IO

Used in the Following Protocols:

Poisoning/Overdose/Environmental Exposure (Section 2 Trauma and Environmental)

General Cardiac Arrest (Section 5 Adult Cardiac)

Pediatric Cardiac Arrest – General (Section 6 Pediatric Cardiac)

Initial Date: 07/19/2023

Revised Date:

Section: 9-42R

Racepinephrine

Pharmacological Category: Adrenergic Agonist Agent; Alpha-/Beta- Agonist;
Vasoconstrictor

Routes: Nebulized

Indications:

1. Pediatric patients with stridor at rest without suspected airway obstruction.

Expected effects:

1. Respiratory difficulty and stridor resolves

Dosing: PEDIATRIC RESPIRATORY DISTRESS, FAILURE, OR ARREST

Indication: Pediatric patient presents with stridor at rest without suspected airway obstruction.

Pediatrics administer:

1. Racepinephrine 0.5 mL of 2.25% inhalation solution diluted with 3 mL of NS via nebulizer.

Used in the Following Protocol(s):

Pediatric Respiratory Distress, Failure or Arrest (Section 4 Obstetrics and Pediatrics)

Initial Date: 07/19/2023

Revised Date:

Section: 9-43R

Tetracaine

Pharmacological Category: Local Anesthetic; Local Anesthetic, Ophthalmic

Indications:

1. Eye pain relief related to chemical exposure and subsequent eye irrigation.

Contraindications:

1. Hypersensitivity to anesthetics
2. Large area application
3. Infants < 1 year old

Precautions:

1. Patient should not rub eyes after administration

Expected effects:

1. Numbing of eye

Side effects:

1. Burning
2. Irritation
3. Rash

Notes:

1. Tetracaine is an MCA optional medication and may not be available.

Dosing: POISONING/OVERDOSE/ENVIRONMENTAL EXPOSURE

Adults and Pediatrics administer:

1. Tetracaine, 1-2 drops per eye every 5 minutes, maximum of 5 doses

Dosing: CHEMICAL EXPOSURE

Adults and Pediatrics administer:

1. Tetracaine, 1-2 drops per eye every 5 minutes, maximum of 5 doses

Used in the Following Protocols:

Poisoning/Overdose/Environmental Exposure (Section 2 Trauma and Environmental)

Chemical Exposure (Section 10 Special Operations)

Initial Date: 07/19/2023

Revised Date:

Section: 9-44R

Tranexamic Acid

Pharmacological Category: Hemostatic Agent

Routes: IV/IO

Indications:

1. Massive uncontrolled hemorrhage internal or external

Contraindications:

1. Intracranial bleeding
2. ≤ 18 years of age
3. Injury time greater than 3 hours

Precautions:

1. Transport to hospital that will continue TXA
 - a. TXA delivered in the field is FIRST DOSE
 - a. NOT effective if a SECOND DOSE is not given at the appropriate time in the hospital
2. Ensure receiving facility is aware of exact time of first dose prior to arrival, upon arrival and that it is documented in the EPCR.
3. Do not delay transport for administration of TXA

Expected effects:

1. Reduction of blood loss

Notes:

1. Draw up and mix 1 gram of TXA into a 100 mL bag of normal saline
 - a. Use a filter needle if the medication is supplied in an ampule.
 - b. Apply pre-printed "TXA added" fluorescent-colored label to IV bag.
 - c. Administer mixed medication via piggyback into IV/IO line over 10 minutes.

Dosing: HEMORRHAGIC SHOCK

Indication: Massive uncontrolled hemorrhage internal or external

Adults > 18 years if age administer:

1. TXA 1 gram diluted in 100 mL NS IV/IO piggyback NS

Used in the Following Protocol(s):

Hemorrhagic Shock (Section 2 Trauma and Environmental)

Initial Date: 07/28/2023
Revised Date: 08/11/2023

Section: 9-45R

Verapamil

Pharmacological Category: Antianginal Agent: Antiarrhythmic Agent

Routes: IV

Indications:

1. Symptomatic Tachycardia: Narrow Complex (Regular and Narrow or Irregular and Narrow rhythms)

Contraindications:

1. Hypotension
2. Patient under the age of 1 year.

Expected effects:

1. Slower heart rate
2. Potential conversion to NSR

Side effects:

1. Hypotension
2. Bradycardia

Dosing: TACHYCARDIA (Adult)

Indication: Regular Narrow Complex Tachycardia (i.e., SVT, A-Flutter) and Irregular Narrow Complex Tachycardia (i.e., A-Fib/A-Flutter)

Adults administer:

1. Verapamil 5 mg IV

Used in the Following Protocols
Tachycardia (Section 5 Cardiac)

Initial Date: 7/2005

Revised Date: 05/08/2023

Section: 10-1

General CBRNE Identification of Agents

Purpose: This is written to provide general pre-arrival information for suspected HAZMAT and CBRNE (chemical, biological, radiological, nuclear, and explosive) incidents.

NOTE: This information is an overview of different types of incidents and agents.

Signs of an Incident

1. A chemical or biological incident may not always be obvious.
2. Many of the early signs and symptoms produced by chemical agents may resemble those of a variety of disorders. Biological symptoms are generally delayed.
3. The patient's clinical presentation may offer clues about the type of toxic substance exposure.

A. CHEMICAL INCIDENT

- i. Explosions or suspected release of liquids, vapors or gases
- ii. Mass casualties without obvious trauma
- iii. Similar presentation and/or symptoms for multiple patients.

B. BIOLOGICAL INCIDENT

- i. An unusual increase in the number of individuals seeking care, especially with similar symptoms such as respiratory, neurological, gastrointestinal, or dermatological symptoms.
- ii. Any clustering of patients in time or location (e.g., persons who attended the same public event).

C. RADIOLOGICAL INCIDENT

- i. Notification of the detonation of a nuclear device.
- ii. Dirty bomb
- iii. Known issues with nuclear power plant or other radioactive source.

D. NUCLEAR INCIDENT

- i. Explosion with mushroom cloud and devastation of a large geographical area

E. EXPLOSIVE INCIDENT

- i. Responders should be aware of the possibility of secondary incendiary devices and agents.
- ii. Obvious trauma.

Medical Response

4. First responding units must approach with caution.
5. Approach upwind, uphill and upstream, as appropriate.
6. Utilize resource materials such as the Emergency Response Guidebook, Emergency Care for Hazardous Materials Exposure, or smart phone applications.
7. Utilize appropriate PPE.
8. Be aware of contaminated terrain and contaminated objects.
9. Hazmat response protocols must be initiated, as well as unified incident command.
10. Maintain a safe distance from the exposure area.

Initial Date: 7/2005

Revised Date: 05/08/2023

Section: 10-1

11. Attempt to identify the nature of the exposure by looking for placards, mode of dispersal (vehicle explosion, bomb, aerosolized gas, etc.)
12. Victims and potential victims must be evacuated rapidly from the contaminated area and decontaminated as quickly as possible, if appropriate.
13. Treatment may be initiated within the hot and/or warm zones of an incident by properly trained, protected, and equipped personnel.
14. Be alert for secondary devices.

Select Agents

1. Chemical Agents

- A. Chemical agents are compounds that may produce damaging or lethal effects.
- B. The potential of the agent to do damage is measured by how readily it disperses. Wind and rain will increase the dispersion rate of a chemical agent.
 - i. **Persistent agents** have low volatility, evaporate slowly and are particularly hazardous in liquid form. They stay around for long periods of time (24 hours or longer) and contaminate not only the air but objects and terrain as well. Mustard and the nerve agent VX are examples of persistent agents.
 - ii. **Non-persistent agents** are volatile and evaporate quickly, within several hours. Gases, aerosols, and highly volatile liquids tend to disperse rapidly after release. Phosgene, cyanide and certain nerve agents (with the exception of GD-Soman) are non-persistent agents. Because of their volatility, they pose an immediate respiratory hazard but are not particularly hazardous in liquid form.
- C. Chemical agents are classified by their effects:
 - i. **Nerve agents**, the most deadly of all chemical agents, disrupt nerve transmission within organs and are quickly fatal in cases of severe exposure.
 - ii. **Blood agents** (cyanides) interfere with the blood's ability to transport oxygen throughout the body; often rapidly fatal.
 - iii. **Blister agents**, or vesicants, cause a blistering of the skin and mucous membranes, especially the lungs.
 - iv. **Choking agents**, or pulmonary agents, irritate the lungs, causing them to fill with fluid.
 - v. **Incapacitating agents**, cause an intense (but temporary) irritation of eyes and respiratory tract.

2. Biological Agents: Micro-organisms and toxins, generally, of microbial, plant or animal origin to produce disease and/or death in humans, livestock and crops.

A. Biological agents

- i. Bacterial Agents (e.g. Anthrax, Cholera, Plague, Tularemia, Q-Fever)
- ii. Viral Agents (e.g. Smallpox, Viral Hemorrhagic Fevers)
- iii. Biological Toxins (e.g. Botulinum Toxins, Staphylococcal Enterotoxin B, Ricin, Trichothecene Mycotoxins (T2))

Initial Date: 7/2005

Revised Date: 05/08/2023

Section: 10-1

*Biological agents utilized as a CBRNE may not become evident until hours, days, or weeks after the exposure due to the various incubation periods for each pathogen.

3. **Radiological Agents:** Exposure typically has no immediate effect. The sooner the victim has symptoms (example: nausea and vomiting) the more significant the exposure.
4. **Nuclear Agents:** Primary risk is massive trauma and devastation as the result of a large-scale blast.
5. **Explosives:** Threats with explosive devices may be or large or small scale.

Personal Protective Equipment

1. NIOSH/OSHA/EPA classification system:

- A. **Level A:** Fully encapsulating, chemical resistant suit, gloves and boots, and a pressure demand, self-contained breathing apparatus (SCBA) or a pressure-demand supplied air respirator (air hose) and escape SCBA. (Maximum protection against vapor and liquids)
- B. **Level B:** Non-encapsulating, splash-protective, chemical-resistant suit that provides Level A protection against liquids but is not airtight. (Full respiratory protection is required but danger to skin from vapor is less)
- C. **Level C:** Utilizes chemical resistant clothing along with a full-faced/half mask air purifying respirator or PAPR rather than an SCBA or air-line.
- D. **Level D:** Limited to coveralls or other work clothing, boots, and gloves

2. Universal Precautions:

- A. Assume that all patients are potentially contagious and use appropriate barriers to prevent the transmission of pathogenic organisms. PPE include gloves, gowns, HEPA respirators, face shields and appropriate handwashing.
- B. If a chemical exposure is suspected, appropriate protective suits and respirators (PAPR) with Organic Vapor/HEPA cartridges should be donned.

Initial Date: 7/2005
Revised Date: 05/09/2023

Section: 10-2

Chemical Exposure

Purpose: To provide guidance for the treatment of chemical exposure patients.

Assessment/Management – Chemical Agents

If there is a confirmation of, or symptoms indicative of, a chemical incident, utilize appropriate protective suits and respirators (PAPR) with Organic Vapor/HEPA cartridges should be donned.

- I. Nerve Agents & Cyanide Compounds – refer to **Nerve Agent/Organophosphate Pesticide Exposure-Special Operations Protocol** and **Cyanide Exposure-Special Operations Protocol**.
- II. Choking Agents (e.g., Phosgene, Chlorine, Chloropicrin)
 - A. Exposure Route: Inhalation
 - B. Signs and symptoms:
 1. Cough, dyspnea, irritation of mucous membranes, pulmonary edema
 - C. Patients should be promptly removed from the area to a clean atmosphere.
 - D. Treatment
 1. Assist ventilations, as necessary.
 2. Provide 100% oxygen
 -  3. If wheezing, administer **albuterol** 2.5 mg/3ml **NS** nebulized per **Nebulized Bronchodilators-Medication Protocol** (Per MCA selection may be EMT skill)

Nebulized **albuterol** administration
☒ EMT
 - a. 4 puffs from patient's own prescribed albuterol metered dose inhaler (with spacer if available)
 -  3. For severe exposure consider early interventional airway and aggressive ventilatory support (including CPAP per **CPAP-Procedure Protocol**)
 4. If eye exposure,
 - a. Eye irrigation
 - i. Remove contact lenses
 - ii. Flush with 1000cc of **NS** each eye
 -  b. For eye pain, use **tetracaine hydrochloride** 1-2 drops in each eye, if available.
- III. Vesicant Agents (Blister agents)
 - A. Examples: Sulfur Mustard (HD), Nitrogen Mustard (HN), Lewisite, Phosgene Oxime (CX) Vesicant agents are named for their tendency to cause blisters.
 - B. Exposure Route: Dermal/Inhalation
 - C. Decontamination is critical:
 1. Medical providers will require the proper PPE as determined by unified command before decontaminating patient.

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2. Remove patient's clothing, if necessary.
3. Patients may begin self-decontamination by removing clothing and using soap (if available) and water.
4. Decontaminate by blotting and cleansing with soap (if available) and water.
5. Remember that time is critical for effective mustard decontamination.

D. Management/Treatment

1. Immediate attention should be directed toward:
 - a. Assisted ventilation
 - b. Administration of 100 % oxygen
2. Symptomatic treatment per protocol.

IV. Lacrimator Agents (Tear Gas)

- A. Information: Lacrimator (tearing) agents are widely used by law enforcement, the military, and widely available to the public.
- B. Exposure Route: Inhalation/Ocular
- C. Signs and Symptoms: The most common effects are nasal and ocular discharges, photophobia, and burning sensations in the mucous membranes.

D. Decontamination:

1. Patients should be decontaminated with soap and water.
2. Medical providers require protective masks and clothing for patient management since lacrimator agents are transmitted by physical contact.
3. Decontaminate by blotting and cleansing with soap (if available) and water.

E. Treatment

1. Symptomatic treatment per protocol (no specific antidote).
2. Eye irrigation
 - a. Remove contact lenses
 - b. Flush with 1000cc of **NS** each eye
 - c. Use **Tetracaine hydrochloride**, if available, 1-2 drops in each eye.

Medication Protocols

Albuterol

Tetracaine hydrochloride

Initial Date: 4/2010

Revised Date: 03/24/2023

Section: 10-3

Nerve Agent/Organophosphate Pesticide Exposure Treatment

Purpose: This protocol is intended for EMS personnel at all levels that have been trained in the use of these devices and authorized by the medical control authority to assess and treat patients exposed to nerve agents and organophosphate pesticides utilizing the **Duo Dote/Mark I Antidote Kits** and/or a combination of auto injectors and/or nasal sprays. Administration of non-prepackaged kits is restricted to ALS.

The following medications in this protocol are not required to be carried on EMS vehicles and may be available through special response units.

Medications/Definitions:

- A. One (1) Nerve Agent (NA) Antidote Kit – for the purpose of this protocol means either one (1) Duodote OR one (1) Mark I
 - 1. **Duodote** – a single device with 2 chambers. The front chamber contains 2.1 mg atropine, the back chamber contains 600 mg pralidoxime (2-PAM). When activated the device sequentially administers both drugs through a single needle.
 - 2. **Mark I Antidote kit**– 2 separate injectors. One containing 2mg atropine, the second containing 600 mg of pralidoxime (2-PAM).
- B. **Atropine auto injector**- a single auto-injector of atropine that comes in 3 doses: atropine 0.5 mg, atropine 1 mg, atropine 2 mg.
- C. **Midazolam auto-injector** – 20 mg midazolam per device
- D. **Midazolam nasal spray** – 5 mg per device
- E. **Diazepam auto-injector** – 10 mg per device
- F. Non prepackaged kit administration: Administer 600 mg **pralidoxime** and 2 mg of **atropine** for every one (1) NA Antidote Kit.(ALS only)

Chemical Agents

- 1. Agents of Concern
 - A. Military Nerve Agents including: Sarin (GB), Soman (GD), Tabun (GA), VX
 - B. Organophosphate Pesticides (OPP) including Glutathione, Malathion, Parathion, etc.
- 2. Detection: The presence of these agents can be detected through a variety of monitoring devices available to most hazardous materials response teams and other public safety agencies.

Patient Assessment

- 1. **SLUDGEM** Syndrome
 - A. **S** Salivation / Sweating / Seizures
 - B. **L** Lacrimation (Tearing)
 - C. **U** Urination
 - D. **D** Defecation / Diarrhea
 - E. **G** Gastric Emptying (Vomiting) / GI Upset (Cramps)

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- F. **E** Emesis
- G. **M** Muscle Twitching or Spasm
- 2. Threshold Symptoms: These are symptoms that may allow rescuers to recognize that they may have been exposed to one of these agents and include:
 - A. Dim vision
 - B. Increased tearing / drooling
 - C. Runny nose
 - D. Nausea/vomiting
 - E. Abdominal cramps
 - F. Shortness of breath

NOTE: Many of the above may also be associated with heat related illness.

- 1. Mild Symptoms and Signs:
 - A. Threshold Symptoms *plus*:
 - B. Constricted Pupils*
 - C. Muscle Twitching
 - D. Increased Tearing, Drooling, Runny Nose
 - E. Diaphoresis
- 2. Moderate Symptoms and Signs
 - A. Any or all above *plus*:
 - B. Constricted Pupils
 - C. Urinary Incontinence
 - D. Respiratory Distress with Wheezing
 - E. Severe Vomiting
- 3. Severe Signs
 - A. Any or All of Above *plus*
 - B. Constricted Pupils*
 - C. Unconsciousness
 - D. Seizures
 - E. Severe Respiratory Distress

***NOTE:** Pupil constriction is a relatively unique finding occurs early and persists after antidote treatment. The presence of constricted pupils with SLUDGEM findings indicates nerve agent / OPP toxicity. Constricted pupils may not be present with localized dermal exposure.

Personal Protection

- 1. Be Alert for secondary device in potential terrorist incident
- 2. Personal Protective Equipment (PPE)
 - A. Don appropriate PPE as directed by Incident Commander.
 - B. Minimum PPE for Non-Hot Zone (i.e., DECON Zone)
 - a. Powered Air Purifying Respirator or Air Purifying Respiratory with proper filter
 - b. Chemical resistant suit with boots
 - c. Double chemical resistant gloves (butyl or nitrile)
 - d. Duct tape glove suit interface and other vulnerable areas
- 3. Assure EMS personnel are operating outside of Hot Zone
- 4. Avoid contact with vomit if ingestion suspected – off gassing possible

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5. Assure patients are adequately decontaminated *prior* to transport
 - A. Removal of outer clothing provides significant decontamination
 - B. Clothing should be removed before transport
 - C. DO NOT transport clothing with patient
6. Alert hospital(s) as early as possible

Patient Management (After Evacuation and Decontamination)

1. Evaluate and maintain the airway, provide oxygenation and support ventilation as needed.
2. NOTE: Anticipate need for extensive suctioning
3. Administer appropriate number of NA Antidote kits (**Duo Dote OR Mark I**) kits per Chart A. below.
 - A. NOTE: For NA kit administration only:
 - i. Adult is > 8 years of age
 - ii. Pediatrics is ≤ 8 years of age
 -  B. NOTE: Medical Control contact is required prior to administration for:
 - i. Patients that meet self-administration criteria
 - ii. Patients that meet mild symptoms and signs criteria in chart below:

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	Clinical Findings	Signs/Symptoms	Required Conditions	NA Kits To Be Delivered
SELF-RESCUE	Threshold Symptoms	• Dim vision • Increased tearing • Runny nose • Nausea/vomiting • Abdominal cramps • Shortness of breath	Threshold Symptoms -and- Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit (self-rescue)
	Mild Symptoms and Signs	• Increased tearing • Increased salivation • Dim Vision • Runny nose • Sweating • Nausea/vomiting • Abdominal cramps • Diarrhea	 Medical Control Order	1 NA Kit
	Moderate Symptoms and Signs	• Constricted pupils • Difficulty breathing • Severe vomiting	Constricted Pupils	2 NA Kits
	Severe Signs	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Constricted Pupils	3 NA Kits (If 3 NA Kits are used, administer 1 st dose of available benzodiazepine)

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Clinical Findings	Signs/Symptoms	Required Conditions	NA Kits To Be Delivered
PEDIATRIC < 8 years of age	Pediatric Patient with Non-Severe Signs/Symptoms	Threshold Symptoms -and- Positive evidence of nerve agent or OPP on site  Medical Control Order	1 NA Kit
	Pediatric Patient with Severe Signs/Symptoms	- Constricted pupils - Unconsciousness - Seizures - Severe difficulty breathing Severe breathing difficulty Weakness	1 NA Kit

-  4. Establish vascular access per **Vascular Access and IV Fluid Therapy-Procedure Protocol** when feasible, do NOT delay medication administration
-  5. If NA Antidote kit is not available:
 - A. Administer **atropine auto injector** 2 mg IM for every 1 NA Kit- that is required.
 -  B. Administer atropine 2 mg IV/IM for every 1 NA Kit that is required
 - C. Administer 600 mg pralidoxime IV/IM for every 1 NA Kit that is required (when available)
-  6. Treat seizures
 - A. Adult (> 14 years of age)
 - a. Administer **midazolam** 10 mg IM or 5 mg IN
 1. If available, midazolam auto-injector or midazolam nasal spray may be utilized, ensure total dose (regardless of dosage per device) equals 10 mg IM or 5 mg IN.
 - OR
 - b. Administer **Valium (diazepam)** auto-injector.
 -  B. Pediatrics (≤ 14 years of age)
 - a. Administer **midazolam** 0.1 mg/kg IM (maximum individual dose 10 mg) or 5 mg IV/IO/or IN
 - OR
 1. If available, **diazepam auto-injector** or **diazepam nasal spray** may be utilized, ensure total dose (regardless of dosage per device) does not exceed 10 mg IM or 5 mg IN.

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7. Monitor EKG

8. For continued secretions, contact Medical Control and administer additional **atropine** per orders.

A. Adults (> 14 years of age) **atropine** 2 mg IV/IM



B. Pediatrics (≤ 14 years of age) **atropine** 0.05 mg/kg IV/IM

Nerve Agent/Organophosphate Antidotes/Countermeasures

Weight	Age	Duodote ¹ Mod-Severe Sxs	Atropen ² (1 mg) Mod- Severe Sxs	Atropine Dose (0.1 mg/kg) IM/IV/IO	Atropine Vial ² (1 mg/mL)	Cardiac Atropine ^{2,3} (1 mg/10 mL)	Midazolam ⁴ (10 mg/2 mL) IM/IV/IO
3-5 kg (6-11 lbs)	0-2 months	1	1	0.4 mg	0.4 mL	4 mL	0.1 mL
6-7 kg (13-16 lbs)	3-6 months	1	1	0.7 mg	0.7 mL	7 mL	0.2 mL
8-9 kg (17-20 lbs)	7-10 months	1	1	0.9 mg	0.9 mL	9 mL	0.2 mL
10-11 (21-25 lbs)	11-18 months	1	1	1 mg	1 mL	10 mL	0.2 mL
12-14 kg (26-31 lbs)	19-35 months	1	2	1.3 mg	1.3 mL	13 mL	0.25 mL
15-18 kg (32-40 lbs)	3-4 years	1	2	1.6 mg	1.6 mL	16 mL	0.3 mL
19-23 kg (41-51)	5-6 years	1	2	2 mg	2 mL	20 mL	0.4 mL
24-29 kg (52-64)	7-9 years	2	3	2.6 mg	2.6 mL	26 mL	0.5 mL
30-36 kg (65-79 lbs)	10-14 years	2	3	3.3 mg	3.3 mL	33 mL	0.6 mL
Adult	>14 years	2 to 3	4 to 6	4 to 6 mg	4 to 6 mL	40-60 mL	2 mL

¹Preferred initial autoinjector, ²May Repeat atropine every 5 minutes until airway secretions decrease (6 mg maximum), ³Not available in MEDDRUN, ⁴Patients with severe symptoms should receive midazolam even if not obviously seizing

Medication Protocols

Atropine

Midazolam

Nerve Agent Antidote Kit

Pralidoxime

Initial Date: 10/25/2017
Revised Date: 12/27/2022

Section 10-4

CHEMPACK/MEDDRUN

Purpose: The CHEMPACK Project provided the State of Michigan, in collaboration with the Center for Disease Control (CDC) and the U.S. Department of Homeland Security, with a sustainable, supplemental source of pre-positioned nerve agent/organophosphate antidotes and associated pharmaceuticals. A large-scale event would rapidly overwhelm both the pre-hospital and hospital healthcare systems.

The CHEMPACK project is one component of the Michigan Emergency Preparedness Pharmaceutical Plan (MEPPP), a comprehensive statewide plan for coordinating timely application of pharmaceutical resources in the event of an act of terrorism or large-scale technological emergency/disaster.

The Michigan Emergency Drug Delivery and Resource Utilization Network (MEDDRUN) established standardized caches of medications and supplies strategically located throughout the State of Michigan. In the event of a terrorist incident or other catastrophic event resulting in mass casualties, MEDDRUN is intended to rapidly deliver medications and medical supplies, when local supplies are not adequate or become exhausted. The goal is to deploy MedPack within 15 minutes of the request.

Only authorized agencies and officials can request MEDDRUN. These agencies include any Michigan Hospital, local public health agency, or emergency management program. Authorized officials include designated representatives from the Bureau of Emergency Preparedness, EMS, and Systems of Care (BEPESOC), the Michigan State Police (MSP) and the Regional Bioterrorism Preparedness projects.

Activation

- I. Recognition of need can come from EMS personnel, or it may be a hospital, public health, EOC, or Emergency management that identifies the need for activation.
 - A. EMS Identifies a need for medication support.
 1. Contact Central Dispatch or a hospital/MCA
 2. Central Dispatch or hospital/MCA contacts MEDDRUN and/or CHEMPACK Communications Agency
 - B. Hospital, Public Health, EOC or Emergency Management
 1. Identifies need
 2. Hospital, Public Health, EOC or Emergency Management contacts MEDDRUN and/or CHEMPACK Communications Agency
 - C. To activate MEDDRUN and/or CHEMPACK call:
 1. Primary Communication Agency: 877-633-7786
 2. Backup Communication Agency: 616-391-5330
- II. CHEMPACK/MEDDRUN Communications Agency:
 - A. Conducts analysis & issues deployment orders to selected CHEMPACK/MEDDRUN storage sight, (CSS) Point of Contact (POC).
- III. Storage site notifies the transport unit and moves cache to designated loading area.

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- A. If confirmed, the Agency loads CHEMPACK/MEDDRUN supplies onto transport unit.
- B. If deployed, Dispatch notifies the MCA regarding dispatching transport vehicle.

Responsibilities

- I. BEPESOC follow-up will include:
 - A. Contacting the requesting agency to authenticate the request.
 - B. Contacting Communications Agency to provide confirmation or initiate recall. If confirmed, advise if Alert Orders should be initiated.
 - C. Contacts Michigan State Police (MSP) East Lansing Operations Center (ELOP)
 - D. Coordinates potential Inter-Hospital Formulary Distribution.
 - E. Coordinates a MI-HAN Alert.
- II. Communications:
 - A. Provides Certificate Order/Recall Order.
 - B. Notifies storage site Point of Contact of either a Certification Order or Recall Order.
 - C. If BEPESOC issues an alert, Communications Agency issues an Alert Order to appropriate CHEMPACK storage site(s) for possible deployment.
- III. Storage Site:
 - A. Once confirmed, the Agency loads the supplies into the transportation vehicle and transports to the specific location.
- IV. Designated Transportation Agency:
 - A. Ensure adequate security of the cache materials while being transported to the delivery point.
 - B. Maintain communications with the storage site's Point of Contact while en route to the delivery point, providing periodic updates regarding present location/circumstances that may impact time of delivery.
 - C. Follow the routes specified by the CSS POC and advise upon arrival to the delivery point.

DELIVERY OF CACHE

- I. When the cache arrives at the delivery point, the Incident Command (IC) will take receipt of the cache as the person in charge by completing the Transfer of Custody form that will accompany the cache. The IC will ensure accurate accounting of the antidote supplies in coordination with the senior medical/EMT at the scene.
 - A. If additional antidotes are required, the IC will Inform Central Dispatch/911.
 - B. If it appears that the amount of antidote needed will be less than anticipated, the transport vehicle will remain in the area to take custody of the unused antidotes to return them to the CSS POC.
 - C. Advise the CSS POC when the mission is completed.

POST DEPLOYMENT

- I. Within 72 hours of a deployment, the Agencies, BEPESOC and Communications will prepare a Preliminary After Action Report (AAR) using the format prescribed by BEPESOC. (See AAR attachment) BEPESOC will review each AAR with the intent of improving future responses.

Initial Date: 10/25/2017

Revised Date: 12/27/2022

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Re-STOCKING MEDPACKS

- I. It is important that a packs be restocked and placed back in service as quickly as possible. The Agency may be returned to service on a limited basis with a partially depleted MedPack/Chempack. Depending on the availability of federal funds, the Regional Emergency Preparedness Coordinator, in collaboration with BEPESOC, will be responsible for ordering the supplies to re-stock the MedPack(s)/Chempack(s) used.
- II. BEPESOC and Communications will be notified upon the MedPack/Chempack being returned to FULL SERVICE.

**MEDDRUN may also be pre-deployed for special events, designated by the State and Regional Leadership.*



The graphic features a black helicopter flying over a cloudy sky. Below the helicopter, the word "MEDDRUN" is written in large, bold, black serif font. Below "MEDDRUN", the word "CHEMPACK" is written in large, bold, black serif font, with a chemical structure overlaying the letters. The entire graphic is framed by two horizontal red lines.

To activate MEDDRUN and/or CHEMPACK call:

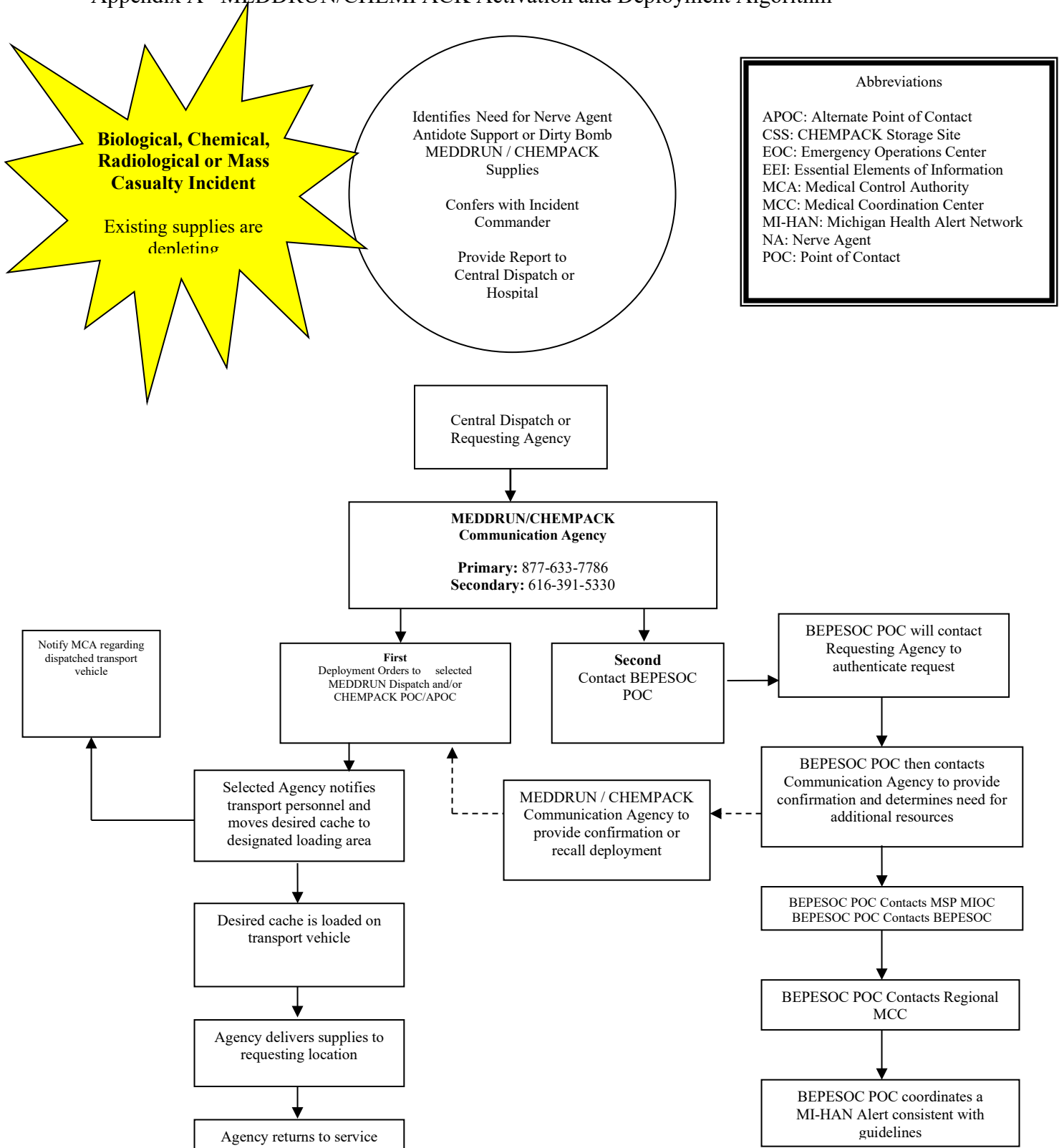
Primary Communications Agency
(877) 633-7786

Backup Communications Agency
(616) 391-5330

Initial Date: 10/25/2017
Revised Date: 12/27/2022

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Appendix A –MEDDRUN/CHEMPACK Activation and Deployment Algorithm



Initial Date: 10/25/2017
Revised Date: 12/27/2022

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Essential Elements of Information (EEI) Report

Essential Elements of Information Report															
1. Name, Position, and Contact Information for the Individual Requesting Deployment of CHEMPACK Cache	Name: _____ Position/Title: _____ Telephone/Other Contact: _____														
2. Name of Physician/Officer in Charge of Medical Management at the Scene (if different than above)	Name: _____ Position/Title: _____ Employer: _____ Telephone/Other Contact: _____														
3. Location of Incident	Jurisdiction Name: _____ Closest Intersection: _____ OR Name of Site: _____														
4. Estimated Number of Casualties	<table border="1"> <thead> <tr> <th>None</th> <th>5-10</th> <th>100-300</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>10-20</td> <td>300-500</td> </tr> <tr> <td>2-3</td> <td>20-40</td> <td>500-1000</td> </tr> <tr> <td>4-5</td> <td>40-100</td> <td>1000+</td> </tr> </tbody> </table>			None	5-10	100-300	1	10-20	300-500	2-3	20-40	500-1000	4-5	40-100	1000+
None	5-10	100-300													
1	10-20	300-500													
2-3	20-40	500-1000													
4-5	40-100	1000+													
5. Symptoms of Casualties	<table border="1"> <tbody> <tr> <td>Pinpoint Pupils</td> <td>Twitching</td> </tr> <tr> <td>Dimness of Vision</td> <td>Seizures</td> </tr> <tr> <td>Slurred Speech</td> <td>Chest Tightness</td> </tr> <tr> <td>Difficulty Breathing</td> <td>Unconsciousness</td> </tr> </tbody> </table>			Pinpoint Pupils	Twitching	Dimness of Vision	Seizures	Slurred Speech	Chest Tightness	Difficulty Breathing	Unconsciousness				
Pinpoint Pupils	Twitching														
Dimness of Vision	Seizures														
Slurred Speech	Chest Tightness														
Difficulty Breathing	Unconsciousness														
6. Local Supplies of Antidotes and Pharmaceuticals are Exhausted, multiple lives remain at risk, and CHEMPACK supplies are needed to save lives	☐ Yes ☐ No														

Initial Date: 9/2004

Revised Date: 03/24/2023

Section: 10-5

Cyanide Exposure

Purpose: This Protocol is intended for EMS personnel at all levels to assess and treat patients exposed to cyanide. Additionally, the protocol allows trained and authorized paramedics to administer antidotes when available.

NOTE: A single medical control order in a mass casualty incident may be applied to all symptomatic patients.

Definitions: For the purposes of this protocol Cyanokit (brand name) refers to **Hydroxocobalamin**

Medications in this protocol are not required to be carried on EMS vehicles and may be available through special response units.

Chemical Agent

1. Agents of Concern: Cyanide
 - a. Hydrogen Cyanide
 - b. Potassium/Sodium Cyanide
 - c. Cyanogen Chloride
2. Detection: The presence of these agents can be detected through specialized environmental monitoring equipment available to hazardous materials response teams.
3. Modes of Exposure
 - a. Inhalation (including smoke inhalation)
 - b. Ingestion
 - c. Skin absorption unlikely
4. Alert receiving hospital ASAP to prepare additional antidotes

Assessment

1. Hypotension
2. Shortness of breath
 - a. Possibly accompanied by chest pain
 - b. Generally, not associated with cyanosis
 - c. Pulse oximetry levels usually normal
 - d. Usually associated with increased respiratory rate and depth
 - e. Potential for rapid respiratory arrest
3. Confusion, decreased level of consciousness, coma
4. Seizures
5. Headache, dizziness, vertigo (sense of things spinning)
6. Pupils may be normal; dilation is a late sign

Indications for Antidote use in patient with suspected cyanide poisoning:

1. Cardiac or Respiratory Arrest
2. Hypotension SBP<90 mm Hg
3. GCS ≤ 9

Personal Protection

1. Be Alert for secondary device in potential terrorist incident

Initial Date: 9/2004

Revised Date: 03/24/2023

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2. Personal Protective Equipment (PPE) as directed by Incident Commander.
3. Assure EMS personnel are operating outside of Hot and Warm Zones, unless appropriately trained and in proper PPE.
4. Avoid contact with vomit if ingestion suspected – off gassing possible
5. Decontamination of victims usually not indicated unless additional unknown chemical(s) suspected

Patient Management (in Cold zone)

1. Administer oxygen 10-15 LPM via non-rebreather mask and support ventilation as needed. Per **Oxygen Administration-Procedure Protocol and/or Airway Management-Procedure Protocol**

- a. Note: Patients in respiratory arrest (i.e., not breathing but still having a pulse) have been found to respond to antidote therapy and should receive positive pressure ventilation when operationally feasible.
- b. This is in contrast to most triage systems that would categorize non-breathing patients as non-survivable.



2. Establish vascular access. Refer to **Vascular Access & IV Fluid Therapy-Procedure Protocol**



3. Administer antidote:

- a. **Cyanokit®** (5g. adult IV/IO; 70 mg/kg pediatric IV/IO) per **Hydroxocobalamin (Cyanokit®)-Medication Protocol** (preferred, per MCA Selection)

Cyanokit® Included?



Yes



No

- b. Each vial of **Cyanokit®** for injection is to be reconstituted with diluent (not provided with **Cyanokit®**) using the supplied sterile transfer spike.
 - i. The recommended diluent is **0.9% Sodium Chloride** injection (0.9%NaCl).
 - ii. The line on each vial label represents the volume of diluent. Following the addition of diluent to the lyophilized powder, each vial should be repeatedly inverted or rocked, not shaken, for at least 60 seconds for the 5g bottles, 30 seconds for the 2.5g bottles prior to infusion.
 - iii. **Cyanokit®** solutions should be visually inspected for particulate matter and color prior to administration.
 - iv. If the reconstituted solution is not dark red or if particulate matter is seen after the solution has been appropriately mixed, the solution should not be administered to the patient and should be discarded.
 - v. There are a number of drugs and blood products that are incompatible with **Cyanokit®**, thus **Cyanokit®** requires a separate intravenous line for administration.
 - vi. Depending upon the severity of the poisoning and the clinical response, a second dose of 5 g may be administered by IV/IO infusion for a total dose of 10g in adults. The rate of infusion for the second dose may range from 15 minutes (for patients in extremis) to two hours, as clinically indicated.



Contact medical control for second dose instructions for pediatric patients.

Cyanokit® Administration for Suspected Cyanide Poisoning (including serious smoke inhalation)

Weight	Age	Cyanokit® Dose ¹ (~70 mg/kg +/-) IV/IO	Cyanokit® Volume to Administer ² IV/IO
3-5 kg (6-11 lbs)	0-2 months	250 mg	10 mL ³
6-7 kg (13-16 lbs)	3-6 months	500 mg	20 mL ³
8-9 kg (17-20 lbs)	7-10 months	625 mg	25 mL ³
10-11 (21-25 lbs)	11-18 months	750 mg	30 mL ³
12-14 kg (26-31 lbs)	19-35 months	900 mg	36 mL ³
15-18 kg (32-40 lbs)	3-4 years	1100 mg	44 mL ³
19-23 kg (41-51)	5-6 years	1500 mg	60 mL ³
24-29 kg (52-64)	7-9 years	1750 mg	70 mL ³
30-36 kg (65-79 lbs)	10-14 years	2500 mg	100 mL ⁴ (1/2 bottle)
Adult 37-40 kg (80-88 lbs)	>14 years	3000 mg	120 mL ⁴
Adult 41-49 kg (89-108 lbs)	>14 years	3500 mg	140 mL ⁴
Adult > or 50 kg (> or 109 lbs)	>14 years	5000 mg	200 mL ⁴ (full bottle)

¹The safety and efficacy in pediatrics has not been established, ²Administer slowly over 15 minutes.

³Push slowly over 15 minutes, ⁴Infuse over 15 minutes

4. Cardiac monitoring

5. Special Considerations for Smoke Inhalation

- Smoke inhalation victims may have cyanide poisoning along with burns, trauma, and exposure to other toxic substances making a diagnosis of cyanide poisoning particularly difficult.
- Prior to administration of **Cyanokit®**, smoke inhalation victims should be assessed for the following:
 - Exposure to fire or smoke in an enclosed area
 - Presence of soot around the mouth, nose or oropharynx
 - Altered mental status
- The **Cyanokit®** should be considered for all serious smoke inhalation victims (including cardiac arrest).

Medication Protocols

Hydroxocobalamin (Cyanokit®)

Mass Casualty Incidents

The purpose of this protocol is to provide a uniform initial response to a Mass Casualty Incident (MCI).

- I. **Definition of MCI:** For the purpose of this document, an MCI will be defined as any incident, which because of its physical size, the number and criticality of its victims, or its complexity, is likely to overwhelm those local resources, which would typically be available.
- II. **Overall MCI Management – DISASTER Paradigm™**
The DISASTER Paradigm™ is part of the National Disaster Life Support (NDLS) Program and provides a framework for management of MCIs. The components may be pursued concurrently.
 - A. **Detection:** Do we have an MCI? If yes, immediately declare to dispatch.
 - B. **Incident Command:** Establish or interface with the Incident Command System (ICS)
 - C. **Safety and Security:** Immediate action steps to immediately protect responders, casualties, public.
 - D. **Assess Hazards:** Actively assess (initially and ongoing) for hazards that can harm responders, casualties, public.
 - E. **Support:** Request resources needed to effectively manage incident
 - F. **Triage and Treatment:** Initiate SALT Triage and provide treatment to casualties
 - G. **Evacuation:** Transport of casualties to appropriate hospitals (avoiding overloading individual hospitals) or alternate treatment centers
 - H. **Recovery:** Return responders and community to pre-incident status and identify lessons learned.
- III. **MCI Detection**
 - A. Actively assess the scene to determine if MCI is (or maybe) present
 - B. Alert dispatch and assure hospitals and other stakeholders made aware
 - C. For major incidents (including incidents involving multiple counties/MCA resources) RMCC should be alerted
- IV. **Incident Command System**
 - A. All incidents shall be managed in accordance with the National Incident Management System and the National Response Framework.
 - B. If Incident Command (IC) has not been established, the most qualified EMS personnel shall assume the role of IC until command is transferred.
 - C. The IC is responsible for all functions of the Incident Command System (ICS) until other personnel are assigned those functions.
 - D. Establish EMS Branch Director/EMS Group Supervisor
 1. Established by IC
 2. Responsible for all EMS activities
 3. Reports to IC or Operations Chief
 - E. Establish functional subordinate EMS ICS positions, as appropriate. Note, positions may be combined (e.g., Treatment/Transport) when appropriate.
 1. Triage Unit Leader Role
 - a. Report to EMS Branch Director/Group Supervisor

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MASS CASUALTY INCIDENTS

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- b. Coordinates rapid triage process
 - c. Determines number/severity of casualties
 2. Treatment Unit Leader Role
 - a. Within EMS Branch/Group Operations, establish Casualty Collection Point (CCP)
 - b. Assigns personnel to treatment area(s)
 - c. Supervise care in treatment areas and/or establish subordinate treatment unit leaders for selected casualty types (e.g., Red, Yellow, Green, etc.).
 3. Transportation Unit Leader Role
 - a. Prioritize transportation of patients from scene assuring high priority patients transported first and departing ambulances maximally utilized.
 - b. With information from coordinating resource, assigns destination hospital or alternate care center
 - c. Maintains log and tracking of patients transported
 - V. **Safety and Security**
 - A. Responders should don appropriate personal protective equipment (PPE)
 - B. Identify any immediate threats to responders, patients, or the public
 - VI. **Assess for Hazards**
 - A. Actively assess scene for hazards
 - B. Ongoing assessment for new hazards
 - VII. **Support – Request Additional Resources for Incident**
 - A. Ambulances
 1. Request additional ambulances
 2. Ideally, one ambulance for every two Red/Yellow patients
 - B. Non-Ambulance Medical Transport
 1. Non-licensed vehicles may be used for emergency transport when licensed ambulances are not readily available.

If an ambulance operation is unable to respond to an emergency patient within a reasonable time, this part does not prohibit the spontaneous use of a vehicle under exceptional circumstances to provide, without charge or fee and as a humane service, transportation for the emergency patient. Emergency medical personnel who transport or who make the decision to transport an emergency patient under this section shall file a written report describing the incident with the medical control authority. MCL 333.20939
 2. Non-Licensed vehicles include (but are not limited to):
 - a. Wheelchair vans
 - b. Busses
 - c. Other public safety vehicles
 - C. Request specialized resources, as appropriate
 1. Local/regional mass casualty resources
 2. Decontamination units
 3. Air medical units
 4. Activate MEDDRUN/CHEMPAC per protocol

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D. For major incidents, RMCC may be appropriate for coordination of support

VIII. **Triage and Treatment**

A. Initiate SALT Triage - Preferred

1. Sort – Perform global assorting
2. Assess – Perform individual assessment
3. Life Saving Interventions
 - a. Control major hemorrhage
 - b. Open airway (if child, 2 rescue breaths)
 - c. Chest decompression, as needed (Paramedic only)
 - d. Auto-injector antidote (e.g., Duodote®)
4. Treatment and Transport

B. Triage other than SALT must be compliant with the Model Uniform Core Criteria for Mass Casualty Incident Triage (MUCC)¹

C. Categorize Patients

1. **Immediate (Red):** Unable to follow commands or make purposeful movements, OR they do not have a peripheral pulse, OR they are in obvious respiratory distress, OR they have a life-threatening external hemorrhage; provided their injuries are likely to be survivable given available resources. Examples include:
 - a. Physiologic and anatomic Trauma Triage Criteria
 - b. Major burns (>20% BSA)
 - c. Moderate to severe respiratory distress
2. **Delayed (Yellow):** Able to follow commands or make purposeful movements, AND they have peripheral pulse, AND they are not in respiratory distress, AND they do not have a life-threatening external hemorrhage, AND they have injuries that are not considered minor. Examples include:
 - a. Mechanism of injury Trauma Triage Criteria
 - b. Isolated fractures/dislocations
 - c. Large and/or multiple lacerations with controlled bleeding
 - d. Deep burns <20% BSA
3. **Minimal (Green):** Able to follow commands or make purposeful movements, AND they have peripheral pulse, AND they are not in respiratory distress, AND they do not have a life-threatening external hemorrhage, AND their injuries are considered minor. Examples include:
 - a. Minor wounds (abrasions, isolated laceration)
 - b. Contusions
 - c. Minor head trauma (GCS 15)
4. **Expectant (Gray):** unable to follow commands or make purposeful movements OR they do not have a peripheral pulse, OR they are in obvious respiratory distress, OR they have a life-threatening external

¹ Model Uniform Core Criteria for Mass Casualty Triage. Disaster Med Public Health Preparedness.2011;5:125-128, doi: 10.1001/dmp.2011.41.

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hemorrhage, AND they are unlikely to survive given the available resources. These patients should receive resuscitation or comfort care when sufficient resources are available. Examples include:

- a. Major head trauma (open skull fracture with exposed brain, blown pupil, etc)
 - b. Major burns (>75% BSA)
5. **Dead (Black):** No spontaneous breathing after establishing a basic airway (and 2 ventilations in a child). Patients triaged as Dead should be reassessed after initial triage to confirm no signs of life.
- D. Establish Casualty Collection Point(s)
1. One or more sites to provide triage and treatment
 2. May be subdivided into treatment areas based on triage category
 3. Emphasis should be on providing lifesaving treatment and rapid transport
 4. Minimal patients can be sequestered in a designated area
 5. Perform secondary triage within each treatment area as able
- E. Treatment
1. Treatment should be provided in accordance with Michigan EMS State Protocols
 2. ALS should be limited to essential medical interventions, including pain relief
- IX. **Evacuation**
- A. Transport Unit Leader should assure all departing ambulances and non-licensed transport vehicles depart scene with highest acuity patients
1. Assure distribution of patients to appropriate hospitals (e.g., trauma centers)
 2. Maintain a tracking log of patients, acuities, and destinations
- B. Non-hospital alternate care centers may be established in major incidents for lower acuity patients
- C. Licensed EMS personnel should accompany injured patients when transported in non-licensed vehicles whenever possible
- X. **Recovery**
- A. Responder rehabilitation (e.g., hydration, nutrition)
- B. Responder recovery (e.g., physical and emotional)
- C. Agency recovery (e.g., resupply, workforce recovery) and completion of After Action Review
- D. Community recovery

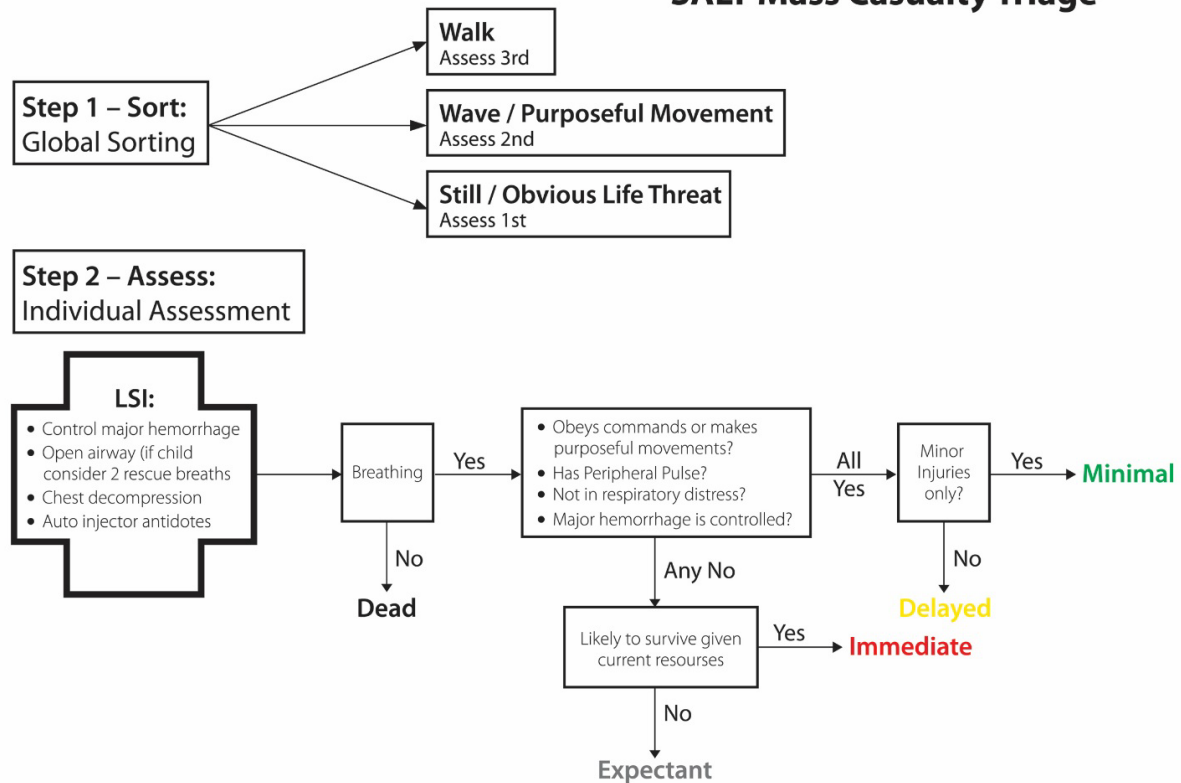
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SALT Mass Casualty Triage



XI. REGIONAL MEDICAL COORDINATION CENTER (RMCC)

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 2/9/24

MCA Implementation Date: 3/25/24

MDHHS Approval: 10/26/18

MDHHS Reviewed 2023

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The RMCC serves as a regional multi-agency coordination center entity as defined by the National Incident Management System (NIMS). The RMCC serves as a single regional point of contact for the coordination of healthcare resources. The RMCC is intended to optimize resource coordination among hospitals, EMS agencies, medical control authorities and other resources. The RMCC serves as a link to the Community Health Emergency Coordination Center (CHECC).

The RMCC acts as an extension and agent of the Medical Control Authority.

A. RMCC Responsibilities include, but are not limited to:

1. Maintain communications with all involved entities
 - a. EMS Branch Directors
 - b. EMS Division/Group Supervisors
 - c. EMS Unit Leaders
 - d. Hospitals
 - e. Local EOCs (when activated)
 - f. CHECC (when activated)
 - g. Alternate care sites (when activated)
 - h. Other RMCCs (as appropriate)
2. Provide initial and update alerts via available communications resources.
3. Provide frequent updates to on-scene EMS Branch Directors/Group/ Supervisors (or designee) regarding hospital casualty care capacity.
4. May relay casualty transport information to receiving facilities.
5. May relay urgent and routine communications to appropriate entities.
6. May assist in coordination and distribution of resources.
7. Other appropriate tasks as necessary for an effective regional medical response.

B. RMCC Immunity from Liability

It is the intent of this protocol that the Regional Medical Coordination Center and the personnel staffing the RMCC and performing the functions are afforded immunity from liability whether or not a Mass Casualty Incident has occurred, as provided through MCL 333.20965 of Part 209 of PA 368 of 1978, as amended. This section specifically provides immunity from liability protection to Medical Control Authorities in the development and implementation of department-approved protocols (see language below):

Sec. 20965 (3) Unless an act or omission is the result of gross negligence or willful misconduct, the acts or omissions of any of the persons named below, while participating in the development of protocols under this part, implementation of protocols under this part, or holding a participant in the emergency medical services system accountable for department-approved protocols under this part, does not impose liability in the performance of those functions:

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(a) The medical director and individuals serving on the governing board, advisory body, or committees of the medical control authority or employees of the medical control authority.

(b) A participating hospital or freestanding surgical outpatient facility in the medical control authority or an officer, member of the medical staff, or other employee of the hospital or freestanding surgical outpatient facility.

(c) A participating agency in the medical control authority or an officer, member of the medical staff, or other employee of the participating agency.

(d) A nonprofit corporation that performs the functions of a medical control authority.

333.20965 Immunity from liability

XII. STATE COMMUNITY HEALTH EMERGENCY COORDINATION CENTER (CHECC)

A. Operated by MDHHS Bureau of EMS, Trauma and Preparedness

B. EMS Personnel should be aware of the existence of CHECC but are not expected to directly interface with CHECC.

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Appendix 1:

Definitions:

Incident Command System: The ICS organizational structure develops in a top-down fashion that is based on the size and complexity of the incident, as well as the specific hazard environment created by the incident.

Unified Command: In incidents involving multiple jurisdictions, a single jurisdiction with multi-agency involvement, or multiple jurisdictions with multi-agency involvement, unified command can be implemented. Unified command allows agencies to work together effectively without affecting individual agency authority, responsibility, or accountability

Incident Commander (IC): The IC is the individual responsible for all incident activities, including the development of strategies and tactics and the ordering and the release of resources. The IC has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site. EMS will typically fall under the IC through a subordinate Branch, Division or Group.

Section Chief: A Section Chief may be assigned to Operations, Logistics, Planning, or Administration/Finance depending on the size of the incident. Not all incidents will require all 4 sections to be assigned.

Branch Director: A Branch Director may be assigned under the Operations Section Chief. Branch Directors are responsible for managing a specific discipline including Fire, EMS, Law Enforcement, Public Works, Public Health, etc.

Division Supervisor: A Division Supervisor is assigned to an area that is separated by a barrier. Examples of a Division would be a multi-level structure, include separated by a river, etc. Numbers are primarily used to identify divisions.

Group Supervisor: A Group Supervisor functions within the Operation Section and is assigned to a specific group. Letters of the alphabet are primarily used to identify groups.

Unit Leaders: Units can be assigned to the Command and General Staff or within a Group or Division.

Medical Unit Officer: The Medical Unit Officer is the individual responsible for the management of incident responder medical treatment and rehab.

Safety Officer: The IC shall appoint a Safety Officer who will ensure safety of responders and victims during the incident operations. With the concept of Unified Incident Command there is valid reasoning to have Assistant Safety Officers to include all disciplines involved in the operation. The Safety Officer appointed by the IC shall have the authority designed within the Incident Command System with the input and advice of all Assistant Safety Officers.

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Deputies: Deputies are used within the Command and General Staff or Sections of the ICS. A Deputy may be a higher-ranking responder that assists the IC or Section Chief however does not assume Command.

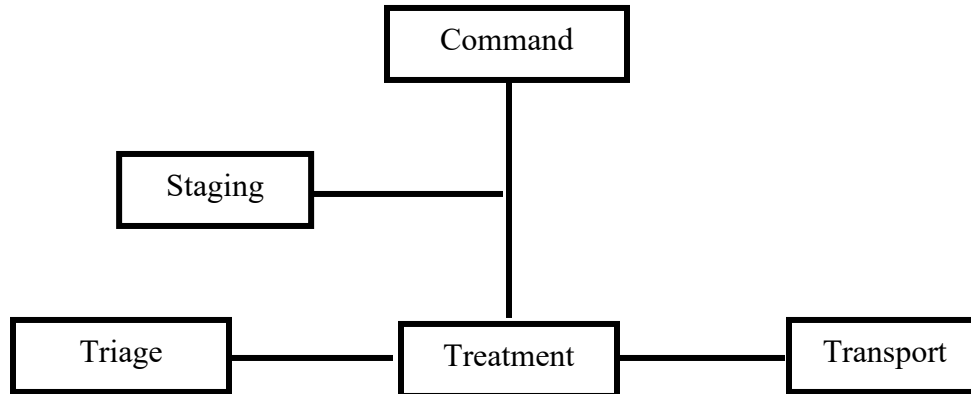
Coordinating Resource: the entity within the local EMS system responsible for the notification and coordination of the mass casualty response. Examples include: medcom, resource hospital, MCA, medical control, dispatch

Regional Medical Coordination Center: The RMCC serves as a regional multi-agency coordination entity as defined by the National Incident Management System (NIMS). The RMCC serves as a single regional point of contact for the coordination of healthcare resources. The RMCC is intended to optimize resource coordination among hospitals, EMS agencies, medical control authorities and other resources. The RMCC serves as a link to the Community Health Emergency Coordination Center (CHECC).

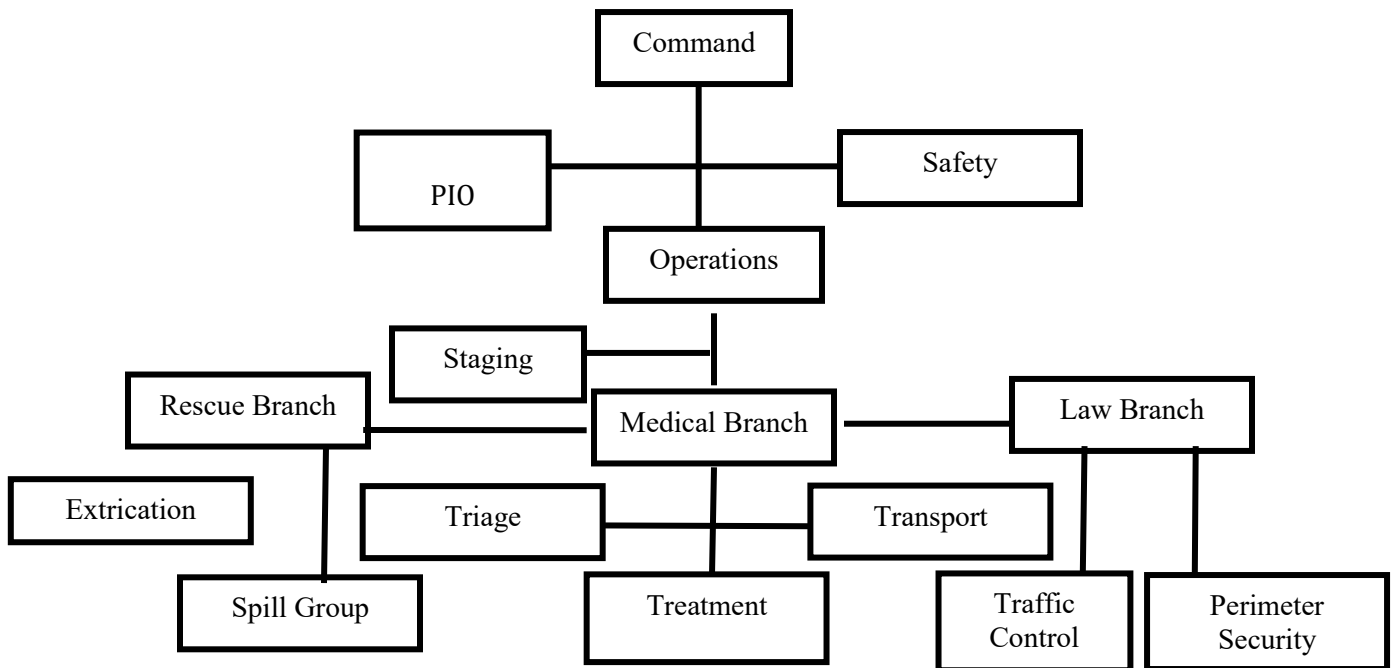
Community Health Emergency Coordination Center: The CHECC serves as a statewide multi-agency coordination entity as defined by NIMS. CHECC is intended to coordinate state-level healthcare and public health resources, to serve as a central point of contact for regional RMCC's, and to serve as a resource to the State EOC. CHECC is expected to be activated following a major disaster or other public health emergency and should be operational within hours of activation.

Appendix 2:

Example ICS Organizational Chart for Simple Incident



Example ICS Chart for Complex Incident



Tri-County Emergency Medical Control Authority
SPECIAL OPERATIONS
MASS CASUALTY INCIDENTS - Addendum



Initial Date: 11-10-2025

Revised Date:

Section 10-6a

RESOURCE HOSPITAL ROLE

Activation of Mass Casualty Incident (MCI) Events:

- EMS will declare an MCI, establish triage, and designate a Triage Officer or Transport Officer on scene.
- EMS will select a TCEMCA member hospital to be the Resource Hospital and contact them.
 - EMS will advise that they have an MCI, type of incident, estimating number of patients, and advise they are designating your hospital as the Resource Hospital.
 - EMS will have communication with the Resource Hospital for patient transport destination decisions.

Designated Resource Hospital

- Once designated as the resource hospital:
 - All emergency departments must stay open to all patients, making plans for possible influx of patients from MCI under your facility Mass Casualty Incident emergency operations plan.
 - Contact all TCEMCA hospitals and advise of the MCI, any MCI details they have, and ask them to determine number of Red, Yellow, & Green patients they can manage.
 - UMH-Sparrow is a Level I trauma center.
 - McLaren Greater Lansing is Level III trauma center.
 - Eaton Rapids Medical Center, UMH-Sparrow Clinton, and UMH-Sparrow Eaton are all Level IV trauma centers.
 - Track all hospital capabilities and all patients sent to each facility. (reverse side)
 - Disperse patients across all emergency departments in attempt to not overwhelm any one health system based on each hospital's capabilities and patient condition.

Tri-County Emergency Medical Control Authority
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MASS CASUALTY INCIDENTS - Addendum



Initial Date: 11-10-2025

Revised Date:

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Designated Resource Hospital Cont.

- When EMS calls the resource hospital with a patient, EMS will advise patient triage level (Red, Yellow, Green), and any patient information they have such as age, sex, injury(s), etc.
 - Resource hospital assigns patient destination hospital based on patient condition and ER capabilities. The Resource hospital advises EMS where to transport the patient and contacts the destination hospital to advise a patient is coming along with any information they have regarding the patient.
 - Resource hospitals may use their own hospital patient intake form for patient information (if used), just like receiving a non-MCI ambulance, recording what hospital you sent the patient to on the form.
- Depending on the location or size of the incident the resource hospital may need to reach out to emergency departments that are not within TCEMCA area for patient destination.
- Keep all paperwork used being the resource hospital for the MCI after action plan.



Tri-County Emergency Medical Control Authority

Serving Clinton, Eaton, and Ingham County

Emergency Room Capabilities Chart

		IMMEDIATE 1	DELAYED 2	MINIMAL 3			
Hospital Name	Phone #	RED Patients	YELLOW Patients	GREEN Patients			
							
		SENT TO THEM	SENT TO THEM	SENT TO THEM			
Eaton Rapids Medical Center Level IV Trauma Center	517-663-9455						
McLaren Greater Lansing Level III Trauma Center	517-975-2111						
McLaren GL – Grand Ledge	517-975-1200						
UMH-Sparrow Clinton Level IV Trauma Center	989-227-3437						
UMH-Sparrow Eaton Level IV Trauma Center	517-543-9510						
UMH-Sparrow Main Level I Trauma Center	517-364-3367						
UMH-Sparrow - Okemos	517-253-5525						
Other Hospitals Outside Tri-County	EXAMPLE	2	II	4	I	8	### I

Michigan
SPECIAL OPERATIONS
PRE-HOSPITAL (EMS) MCA MUTUAL AID
DURING DISASTER

Initial Date: 09/2004

Revised Date: 12/27/2002

Section: 10-7

Pre-hospital (EMS) MCA Mutual Aid During Disaster

Purpose: Establish a mechanism allowing EMS agencies/Medical Control Authorities (MCA) to give prehospital care across MCA boundaries during “disaster” conditions.

1. This agreement between the MCAs demonstrates the intention to assist and support each other during a disaster situation. It provides an approved/authorized process allowing EMS agencies to function within a MCA under their originating MCAs protocols, during a disaster.
2. During “disaster” conditions, whether natural or otherwise, MCAs may need assistance from other MCAs. For the purpose of this agreement, a “disaster” is considered to be an emergency event where a “declared” emergency and/or disaster condition as defined by local, state, or federal statutory laws, exists in which the responding MCA and EMS resources may be unable to handle the patient care needs without additional resources from outside its own Medical Control area.
3. Requests for support may be made to any MCA or any EMS agency. It is agreed that mutual aid response is dependent on the availability of equipment and personnel.
4. It is in the best interests of MCAs to include each other in disaster planning efforts. It is expected that upon request, participating MCAs will extend any relevant information on emergency planning to other MCAs as deemed reasonably appropriate by the MCA distributing the information.
5. Participating MCAs agree to adopt, as a minimum, the State Protocols for responding to a disaster event, and those agencies/EMS personnel will follow these when responding outside their own MCA, unless prior arrangements with that MCA.

Initial Date: 5/31/2012
Revised Date: 12/27/2022

Section 10.8

Hazard Contaminated Patient

- I. Identification of the Contaminated Patient
 - a. Use all your senses. Suspect hazardous material situation if you:
 - i. **See** containers, labels or placards, or a location suggesting a hazardous substance
 - ii. **Hear** explosions, or reports of possible contamination, pre-arrival or on scene
 - iii. **Smell** unusual odors – be suspicious
- II. If contamination of a patient is suspected, the local fire or public safety department must be informed of the hazardous material situation.
- III. The responding EMS agencies must prevent further contamination to themselves or others. Determine if any contaminated patients have already left the scene and promptly notify the hospital(s).
- IV. The responding EMS agency must not spread any contamination outside the response area until the responding fire or public safety department incident commander, or appropriate designee, has confirmed that decontamination is complete. Contaminated patients will not be transported out of the decontamination area until field decontamination is complete.
- V. EMS responders will not enter a known contaminated area without proper personal protective equipment, training, and direction by incident command.
- VI. Invasive patient care procedures (IV/IO, OPA, NPA, ET, and Emergency Airway Devices) should not begin until decontamination of the patient is confirmed or until personal protective equipment is in place.
- VII. Prior to transport of a decontaminated patient, on-line medical control will be contacted to assure the patient is transported to a facility equipped to handle the specific needs of the patient.
- VIII. Once the scene Incident Commander, or the appropriate designee, has confirmed that the patient is decontaminated, the responding EMS agency may transport the patient to the designated facility.

Initial Date: 05/31/2017
Revised Date: 12/27/2022

Section 10-9

Suspected Pandemic

Purpose: To have a standard approach to patients during a period of a declared pandemic or state of Public Health Emergency. This approach should increase awareness and protection of first responders and prehospital care while maximizing supplies that may become limited.

Criteria:

1. This protocol will apply to patients encountered by all levels of EMS, during an infectious disease epidemic/pandemic. All agencies should frequently check the CDC.gov website for the latest recommendations with Personal Protective Equipment (PPE) and treatment. These recommendations may change frequently during an evolving and ongoing epidemic/pandemic as regulatory standards are influenced by CDC recommendations.
2. The center for Disease Control and Prevention (CDC) has declared that an epidemic and/or the Michigan Department of Public Health has declared a statewide or local public health emergency.
3. “Acute Febrile Respiratory Illness” (AFRI) is defined as fever and at least one of the following (cough, nasal congestion/runny nose, or sore throat).

EMS System / Medical Control Authority (MCA) Recommendations:

1. Encourage all EMS personnel to receive seasonal and disease specific vaccinations.
2. Each life support agency shall maintain a supply of fit tested N-95 respirators and eye protection (e.g., goggles, eye shield), disposable non-sterile gloves, and gowns.
3. Each life support agency shall provide approved pathogen neutralizing hand sanitizer to staff.
4. Each life support agency should instruct their personnel to stay home and not report for duty if they have signs or symptoms of acute febrile respiratory illness. A staff member that develops these symptoms during a shift must inform the agency supervisor for appropriate follow up procedures.
5. Dispatch centers should be encouraged to screen callers to determine if the patient may have an AFRI. Information should be provided to EMS personnel prior to arriving on the scene if suspected AFRI.
6. If it is determined by EMS that the patient may have an AFRI, early notification to the receiving facility should be done so that appropriate infection control may be taken prior to patient arrival.

Procedure and Patient Categorizations/Situations

1. Limiting Personnel Exposure:

- A. If the patient has symptoms of an “Acute Febrile Respiratory Illness” (AFRI) based upon the dispatch information the responding agency should consider limiting the initial number of personnel that approach or enter a residence.

Initial Date: 05/31/2017
Revised Date: 12/27/2022

Section 10-9

2. **Patients with a medical condition that requires immediate care (e.g., cardiac arrest) and have a recent history of AFRI will be assessed and treated after:**
 - A. EMS Personnel don appropriate PPE prior to proceeding with assessment and treatment.
3. **Patient Assessment:**
 - A. Begin patient assessment while maintaining a 6-foot distance from the patient exercising appropriate routine respiratory droplet precautions (hand hygiene, cough etiquette, and distance) while assessing patient .
 - B. Assess patient for “Acute Febrile Respiratory Illness” which is fever and at least one of the following (cough, nasal congestion/ runny nose, or sore throat).
 - C. If **patient does not have an Acute Febrile Respiratory Illness (AFRI)** proceed to appropriate treatment protocol.
4. If **patient has an AFRI**, EMS personnel with direct patient care shall:
 - A. Don appropriate PPE.
 - B. Place a surgical mask on the patient if tolerated.
 - C. Treat patient according to appropriate protocol.
 - D. Notify Medical Control of assessment findings.
 - E. Encourage good patient compartment vehicle airflow/ventilation to reduce the concentration of aerosol accumulation when possible.
5. **Post Exposure**
 - A. Health care personnel, who have had a recognized unprotected close contact exposure to a person with AFRI can be considered for treatment according to current post-exposure guidelines.
 - B. Clean EMS Transport Vehicles after Transporting a Suspected AFRI.

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
TRANSPORT AND DESTINATION GUIDELINES
(MCA Optional Protocol)

Initial Date: 04/28/17

Revised Date: 12/27/2022

Section 10-10

Transportation and Destination Guidelines

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Purpose:

This protocol is to assist inter-facility transport of patients believed to be infected with a “*special pathogen*” to a hospital that may be outside of the local Medical Control Authority.

Definition:

“*Special pathogen*” refers to highly infectious diseases, including hemorrhagic viral diseases (HVDs) such as Ebola and similar infections.

Transport Destination Decision

1. The patient will be transported to the closest appropriate hospital capable of providing the services needed. *The closest appropriate hospital may be outside of an agency’s primary service area.*
2. Inter-facility transport of patients is permitted by pre-identified transport teams to hospitals that may originate and end outside of the transporting agency’s Medical Control Authority when no local pre-identified specialty transport team is available.

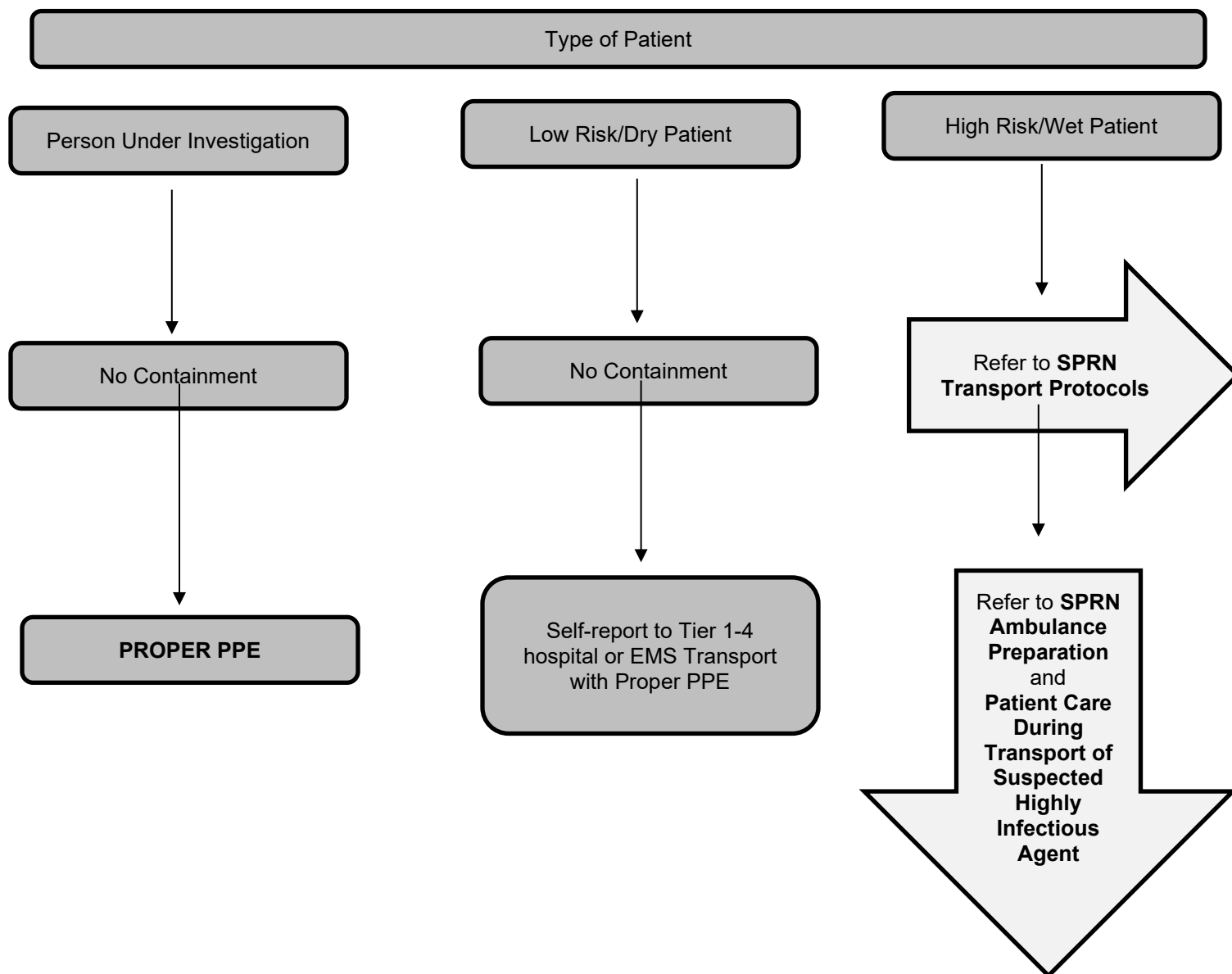
Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
PATIENT CONTAINMENT ALGORITHM
(MCA Optional Protocol)

Initial Date: 04/28/17

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Section 10-11

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Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
TRANSPORT SUPPLIES
(MCA Optional Protocol)

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Section 10-12

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Transport Supplies

Suggested Supplies to be Immediately Available:

- ☐ Manual Suction
- ☐ BP cuff (manual, disposable)
- ☐ Pulse Ox (disposable)
- ☐ Emesis containers (sealable)
- ☐ Absorbent paper towels
- ☐ Sharps Container (small)
- ☐ Nitrile gloves box (Small, Medium, Large, Extra-large)
- ☐ Small trash bags
- ☐ Disinfectant wipes for surfaces
- ☐ Disinfectant wipes for skin
- ☐ Portable O2 tank (15 LPM capable)
- ☐ Nasal Cannula/NRB
- ☐ Cooler/ice packs
- ☐ Blankets (Space)
- ☐ Pillow
- ☐ Trauma Shears
- ☐ 2 Buckets (for bodily fluids, hold trash bags, use for cleaning)
- ☐ Time Keeping Device
- ☐ Sedation and/or pain control guidelines as applicable
- ☐ Medications, needleless delivery system

Suggested Supplies to be in accompanying vehicle or with driver:

- ☐ IV Kit/Fluid/Saline Lock
- ☐ 4X4 and/or Abdominal Pads
- ☐ Tape
- ☐ Rolled Gauze
- ☐ Body bag
- ☐ Cleaning / decontamination equipment
- ☐ Solidifier for liquids
- ☐ Donning/doffing protocols and checklists

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SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
TRANSPORT SUPPLIES
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Cleaning and Decontamination supplies (in accompanying vehicle or with driver):

- ☐ Towels & Cleaning Rags (disposable)
- ☐ Solidifier
- ☐ Bucket for cleaning
- ☐ EPA registered cleaning product with instructions for use
- ☐ Biohazard bags (~20)
- ☐ Box for Biocell / Visquine disposal
- ☐ Zip ties for trash
- ☐ Bleach wipes for outside of Biohazard bags
- ☐ Procedure for cleaning/disinfection
- ☐ Procedure for waste handling

Suggested PPE per team members:

(PPE should cover all skin, mucous membranes and protect against inhalation of aerosolized particles)

☐ Fluid-resistant or impermeable coveralls (appropriate sized suits)	2
☐ Fluid-resistant or impermeable boot covers	2
☐ Powered air-purifying respirator (PAPR)	1
☐ PAPR batteries	2
☐ PAPR filters	1 set
☐ PAPR hoods	1
☐ PAPR hose and clamp	1
OR	
☐ Full-face respirators with appropriate cartridges for protection	2
☐ Surgical Cap/Hair Cover (2)	2
☐ N-95 Respirator	1
☐ Biohazard bags (Large)	30
☐ Biohazard Receptacles (1 small for sharps)	
☐ Nitrile gloves box (1 each of Small, Medium, Large, Extra-large)	1EA
☐ Hand sanitizer (1 bottle)	10
☐ Absorbent rags (package)	
☐ Caution tape (yellow 200' roll)	
☐ Duct tape (roll)	
☐ Buckets (2)	2
☐ Healthcare bleach (wipes) or other EPA-registered hospital disinfectant wipes	
☐ Trauma Shears (for Biocell/Visquine removal)	2
☐ Doffing Pad (Large Fluid Absorbent Fabric) (2)	2

Protocol Source/References:

January 28, 2016 Guidance for developing a plan for interfacility transport of persons under investigation or confirmed patients with Ebola virus disease in the United States
Nebraska Biocontainment Unit and Healthcare and Emergency Responder Organization Education through Simulation (HEROES)

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
TRANSPORT PROCEDURE
(MCA Optional Protocol)

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Transport Procedure

Purpose: The purpose of this procedure is to provide guidance for transport of a patient with a known or suspected highly infectious disease including pathogens referred to as “Category A” agents.

1. Patient belongings

- A. All patient belongings shall be kept in transport vehicle and only be removed at the final destination.
- B. Belongings shall be placed in a biohazard bag if possible and sealed in a manner that will prevent any further contamination to its surroundings.
- C. Belongings will be labeled with the patient name and identification.

2. Documentation

- A. Pt documentation may be performed in a normal manner as outlined by the transporting agencies guidelines. A note pad may be used to document vital signs and times during transport.
- B. All documentation should be performed after the transport is complete as to avoid contamination of equipment and materials. Any materials used for documentation in the patient environment (such as Toughbook, tablets, clipboards etc.) shall be cleaned, disinfected, and decommissioned for the same duration as the transport vehicle and equipment involved in transport.

3. Travel plans

- A. The MDHHS will be the central coordinating agency for the patient transport. Local and state authorities will assist in planning the path of travel so as to assist in the event of an emergency.
- B. A predetermined route will be planned in conjunction with the sending facility, transport agency, receiving facility or airport, and any facilities in between sending facility and receiving facility that are willing to participate and accommodate transport crews for crew changes or emergency procedures.
 - a. Path of travel should be planned out in a way that will keep transport crews on as many major roads as possible to ease the ability of possible responding EMS agencies to locate them in the event of an emergency or accident.
 - b. Consider communication to potential Medical Control Authority along the path of travel in the event that assistance is required.

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- c. Transport team shall attempt to solve any in transport emergencies without involving any outside responding agencies whenever possible.
- d. During transport, hospitals located along an extended route (over 2 hours) may act as Patient Transfer Points (PTP). PTP will be identified and notified prior to patient transport. Although the patient will not leave the transport vehicle, PTP may be used to allow EMS personnel to change staff.

4. Destination arrival

- A. The patient will be accepted by healthcare workers at the hospital or airport directly from the EMS transport rig. EMS team should not leave the designated “hot zone” or “dirty area” until PPE is doffed per protocol. If there is not an appropriate area for complete decontamination at the receiving facility (such as an airport), decontamination should occur at the closest appropriate doffing area. This will prevent the transmission of the pathogen via accidental contamination to the environment.
- B. After proper doffing of PPE, the safety officer, receiving facility or other team members will evaluate and care for crew members involved in transport.
 - a. Post vital signs should be recorded.
 - b. Evaluation for any exposure to the pathogen.
 - c. Food, fluids and lodging may be provided until the receiving facility feels the personnel are fit and able to make the return trip home.
- C. To minimize further contamination of “clean personnel”, only those involved in actual patient transport may operate the transport vehicle during the return trip. It is anticipated that the person will drive the return trip.
- D. Follow cleaning and disinfection of the Ambulance procedure prior to leaving receiving hospital. After airport transfer, the ambulance will go to the designated PTP to doff PPE and follow cleaning and disinfection procedures prior to resuming the return trip to the agency.
- E. The receiving facility or PTP shall accept and properly dispose of any PPE and other material(s) used in the transport vehicle.
- F. Upon arrival back to the home agency, the vehicle and equipment may be sequestered for a predetermined amount of time to allow for full decontamination.
- G. This time will be dependent on the pathogen and current guidelines.
- H. No vehicles or equipment shall be placed back into general service prior to completion of the vehicle quarantine.
- I. If the vehicle is needed prior to completion of quarantine for transport of like case, guidance will be sought from the MDHHS and CDC.

Protocol Source/References:

Guidance for Developing A Plan for Interfacility Transport of Persons Under investigation or Confirmed Patients with Ebola Virus Disease in the United States: <http://www.cdc.gov/vhf/ebola>

Bratt, J., Robinson, A., and Alcorta, R. (n.d.). [Strategies and Considerations for the Deployment of EMS Personal Protective Equipment in Response to an Ebola Outbreak](#). (Accessed 8/1/2016.) Maryland Institute for Emergency Medical Service Systems.

Lowe et al: *Considerations for Safe EMS Transport of Patients Infected with Ebola Virus. Prehospital Emergency Care* October

SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
PATIENT CARE DURING TRANSPORT OF SUSPECTED HIGHLY INFECTIOUS AGENT
(MCA Optional Protocol)

Initial Date: 04/28/17

Revised Date: 12/27/2022

Section 10-14

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Patient Care During Transport of Suspected Highly Infectious Agent

Purpose: The purpose of this procedure is to provide guidance for transport of a patient with a known or suspected highly infectious disease including pathogens referred to as “Category A” agents from a health care facility to another, more specialized health care facility.

The EMS Agency Will

- A. Prior to transport, the transporting agency will communicate with the sending (departing) and receiving (arriving) hospital facility to coordinate existing and anticipated patient care needs.
 - a. Determine the medical authority for the patient while in transit. Refer to the state protocol.
 - b. Determine the number and mix of staff needed to provide care during transport.
 - c. Assure that equipment, devices, and crew can fit into the load-carrying dimensions of all planned transport vehicles.
 - d. Determine if the patient has proper identification for transport.
 - e. Determine method for patient tracking.
 - f. Determine method to document patient care while preventing contamination.
- B. Assess and develop plans for:
 - a. Physical needs of the patient: baseline vital signs via non-invasive method. Use blue tooth technology, disposable O2 saturation monitor.
 - b. Assess ability to provide for physical comfort of patient:
 - i. Heat
 - ii. Air flow
 - c. Plans for failure of equipment.
 - d. Identified pre-existing conditions that will require medication or other means of support (such as diabetes, oxygen therapy, etc.). Identify method to support these conditions if necessary.
 - e. Avoid use of sharps (needles, lancets) unless necessary. Dispose in sharps container.
 - f. Identify current life support status and identify procedures that will or will not be performed during transport.
 - g. Identify medications necessary for patient comfort during transport: sedation, pain, nausea.

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PATIENT CARE DURING TRANSPORT OF SUSPECTED HIGHLY INFECTIOUS AGENT
(MCA Optional Protocol)

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- h. Identify method to handle fluid loss (vomiting, diarrhea, urine) during transport.
 - i. Patient wipes absorbent pads, solidifier, trash bags, duct tape.
 - ii. Wipes for cleaning and disinfection of spills. Minimize the use of bleach wipes during transit to prevent overpowering fumes.
 - C. Provide for crew safety during transport:
 - a. Assess how communication will occur among all crew.
 - b. If PPE is breached, crew should wipe affected area with bleach and communicate breach immediately to supervisor.
 - c. Plans should include area for emergency doffing of PPE for crew safety.
 - d. Identify nearest Patient Transfer Point (PTP) to provide relief of staff.

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SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
AMBULANCE CLEANING AND DISINFECTION
(MCA Optional Protocol)

Initial Date: 04/28/17

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Section 10-15

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Ambulance Cleaning and Disinfection

Purpose:

Proper cleaning and disinfection of an ambulance and equipment are necessary to reduce the bioburden of disease and prevent secondary transmission of a known or unknown highly contagious disease. The process describes the measures needed to clean and disinfect an ambulance prior to its return to service following the transport of a patient with a known or suspected Category A disease.

Note: All disinfection should use a U.S. Environmental Protection Agency (EPA)-registered hospital disinfectant with a label claim for a non-enveloped virus (norovirus, rotavirus, adenovirus, poliovirus) to disinfect environmental surfaces at appropriate concentration and contact time.

1. This process is to be done after the Biocell or visquine (see procedure) has been removed.
2. Site Set Up
 - A. Select an appropriate site for ambulance decontamination that protects the vehicle and the decontamination team from weather elements, preferably a well-ventilated large, enclosed structure.
 - B. Establish a secure perimeter for safety of the public and decontamination personnel.
 - C. Include considerations for waste management, security plan, public perception, and media visibility when selecting decontamination site.
 - D. Depending on the location, the ability for climate control is beneficial.
 - E. Define and mark hot, warm, and cold zones of contamination¹ around the ambulance that require PPE to enter.

¹ The hot zone is considered an area that is known or suspected to be contaminated and has a high risk of exposure. It should only be entered with full PPE. In ambulance decontamination, this would be the vehicle and an area about a meter beyond the ambulance.

The warm zone can be considered a transitional area between the hot and cold zones that has no known contamination but has a moderate risk of exposure. It should only be entered when wearing full PPE. This is also the area where one begins the initial portion of the doffing process (following a full suit wipe down within the hot zone) when leaving the hot zone. For ambulance decontamination, the warm zone can also be the place where waste barrels are pre-positioned so that the waste bags can be placed directly into the containers without entering the hot zone.

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AMBULANCE CLEANING AND DISINFECTION
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3. Prior to cleaning

- A. The patient care provider (while wearing “dirty PPE”) will remove all equipment, supplies, linen, waste PRIOR to leaving the vehicle and before Biocell/Visquine liners are removed from inside the ambulance. Equipment will be placed in the warm zone.
- B. All waste, including PPE, drapes, and wipes, should be considered Category “A” infectious substance, and should be packaged appropriately for disposal.
- C. The driver or other personnel will be responsible for cleaning and disinfection of the transport unit. One to two people will clean and disinfect; a third in PPE will observe and be available to assist as necessary
- D. The cleaning teams will don CLEAN PPE per protocol.
- E. Any areas that are visibly contaminated with the patient’s body fluids should be decontaminated first with an approved EPA-registered disinfectant for the appropriate contact time before soaking up the fluid with absorbent materials.
- F. Place biohazard bag in container close to exit for used cleaning cloths.

4. Cleaning and decontamination

- A. Cleaning will be done beginning at an entrance to the ambulance and moving towards the dirty area. This way, the clean personnel will remain clean as they enter the vehicle and stay in a “clean” area until they exit at the opposite end of the ambulance.
- B. Mix EPA registered cleaning disinfectant per manufacturers’ guidelines. All products will have instructions for cleaning and disinfection. Note the manufacturers’ “dwell time” or the amount of time a surface must stay wet AFTER cleaning to achieve disinfection.
- C. Using disposable cloths begin cleaning all surfaces as the vehicle is entered.
- D. Remove visible soiling of all surfaces.
- E. Allow surface to stay wet during dwell time. Reapply cleaner if necessary.
- F. Change cloths frequently during cleaning process. Place cloths in biohazard bag.
- G. Manually wipe down the ambulance’s exterior patient loading doors and handles, and any areas that may have been contaminated, with disinfectant. The exterior of the ambulance does not require a full disinfectant wipe down.
- H. After ambulance is cleaned, clean re-usable medical equipment.
 - a. Using the above process, clean then disinfect the outside of any prepositioned but unused medical equipment (still inside the protective bags they were placed in).

The cold zone is considered an area that has no contamination and no potential risk for exposure. The individuals in this area are not required to wear PPE, although the cold zone will often also serve as the PPE donning area.

MCA Name: Tri-County Emergency Medical Control Authority

MCA Board Approval Date: 2/9/24

MCA Implementation Date: 3/25/24

MDHHS Approval: 12/27/22

MDHHS Reviewed 2023

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SPECIAL OPERATIONS
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AMBULANCE CLEANING AND DISINFECTION
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- b. If the equipment was removed from a protective bag in transit, assess the equipment to determine if it can be properly cleaned and disinfected, or disposed of.
 - I. Once cleaning and disinfection has been completed, collect and package all waste as Category "A" waste. Dispose of all waste according to organization protocols as well as local and federal regulations for Category "A" infectious substances.
 - J. Remove PPE per checklist. A third person who has been in the cold zone should supervise doffing, which should be performed according to organization doffing protocols.
 5. Further options for decontamination
 - A. Additional cleaning methods can also be used. While not required, this may provide additional assurance to personnel and public prior returning the vehicle to service.
 - B. Ultraviolet germicidal irradiation, chlorine dioxide vapor, or hydrogen peroxide vapor can be used for an additional decontamination step. However, these should not replace the manual cleaning and disinfection, as their efficacy against organisms in body fluids has not been fully established and these methods may require specialized equipment and PPE.
 - C. The ambulance can then be returned to service.

Materials and equipment needed to decontaminate an ambulance (items listed are per person decontaminating)

	Fluid-resistant or impermeable coveralls (appropriate sized suits)	2
	Fluid-resistant or impermeable boot covers	2
	Powered air-purifying respirator (PAPR)	1
	PAPR batteries	2
	PAPR filters	1 set
	PAPR hoods	1
	PAPR hose and clamp	1

OR

	Full-face respirators with appropriate cartridges for protection	2

	Surgical Cap/Hair Cover	2
	N-95 Respirator	1
	Biohazard bags (Large)	30
	Biohazard Receptacles (1 small for sharps)	
	Nitrile gloves box (Small, Medium, Large, Extra-large)	1 EA
	Hand sanitizer (1 bottle)	10

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SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
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	Absorbent rags (package)	
	Caution tape (yellow 200' roll)	
	Duct tape (roll)	
	Buckets	2
	Healthcare bleach (wipes) or other EPA-registered hospital disinfectant wipes	
	Trauma Shears (for Biocell/Visquine removal)	2
	Doffing Pad (Large Fluid Absorbent Fabric)	2

Protocol Source/References:

1. Isakov, A., Jamison, A., Miles, W., & Ribner, B. Safe management of patients with serious communicable diseases: recent experience with Ebola virus. *Annals of internal medicine*. 161(11): 829-830.
2. Isakov A, Miles W, Gibbs S, Lowe J, Jamison A, Swansiger R. Transport and management of patients with confirmed or suspected Ebola virus disease. *Ann of Emerg Med*. 2015; 66(3):297-305.
3. Jelden, K.C., Gibbs, S.G., Smith, P.W., Schwedhelm, M., Iwen, P.C., *Beam, E., Hayes, A.K., Marion, N., Kratochvil, C.J., Boulter, K.C., Hewlett, A., Lowe, J.J. Nebraska Biocontainment Unit Patient Discharge and Environmental Decontamination following Ebola Care. *American Journal of Infection Control*. 2015; 43(3):203-205.
4. Lowe, J.J., Gibbs, S.G., Schwedhelm, S., Nguyen, J., Smith, P.W. Nebraska Biocontainment Unit Perspective on Disposal of Ebola Medical Waste. *American Journal of Infection Control*. 2014; 42:1256-1257.
5. Lowe, J.J., Jelden, K.C., Schenarts, P.J., Rupp, L.E., Hawes, K.J., Tysor, B.M., Swansinger, R.G., Schwedhelm, S.S., Smith, P.W., Gibbs, S.G. Considerations for Safe EMS Transport of Patients Infected with Ebola Virus. *Prehospital Emergency Care*. 2015; 19(2):179-183.
7. Lowe, J.J., Olinger, P.L., Gibbs, S.G., Rengarajan, K, Beam, E.L., Boulter, K.C., Schwedhelm, M.M., Hayes, K.A., Krotchvil, C.J., Vanairsdale, S., Frislie, B; Lewis J., Hewlett, A., Smith, P.W., Gartland, B., Ribner, B.S. Environmental infection control considerations for Ebola. *American Journal of Infection Control*. 2015; 43(7):747-9.
9. Swansiger, R.G., Walters, W.A., Isakov, A.P., Gibbs, S.G., Lowe, J.J. 2014. BioContainment Ground Transport Standard Operating Procedures. Office of Medical Services Operational Medicine. United States Department of State.

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
MEDICAL ISOLATION TRANSPORT DEVICE
(MCA OPTIONAL PROTOCOL)

Initial Date: 10/25/2017

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Section 10-16

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Medical Isolation Transport Device

Definition: A Medical Isolation Transport Device is a vinyl enclosed patient containment device. It creates a negative air environment when closed. It is used for the transport of highly infectious disease patients either internally at a facility or from one facility to another.

1. Patient will be transported in impervious suit if ambulatory, in impervious suit and sheets (as tolerated) if stretcher bound or in isolation pod, as indicated. All transferred patient belongings are considered contaminated and are typically bagged, labeled, and transferred with patient.
2. Any patient care documents should be free of contamination. When in doubt, consider them contaminated and package as appropriate for transport with patient. It may be desirable to store and transmit patient care records electronically if feasible.

Indications for use:

1. A known or suspected case of highly infectious disease that may have been acquired via travel, health care provider, or lab.
2. Drug resistant organism
3. Some Medical Isolation Transport Devices may be used as a positive air environment to transport a patient with known immune deficiency or burns.

Things to know regarding use of Medical Isolation Transport Device:

1. Assess if MEDICAL ISOLATION TRANSPORT DEVICE outside straps are approved for transportation. General rule: vinyl straps are not tested and approved, but some material straps (such as those used in seat belts) may have been tested and approved.
2. The head of the Medical Isolation Transport Device should be placed at the head of the gurney or cart, so the patient is always moving feet first.
3. The white noise created by the blower motor will reduce patient and staff level of hearing.
4. Be careful that wind may catch and move the Medical Isolation Transport Device, especially when unsecured.
5. As the outside temperature increases, the temperature inside the Medical Isolation Transport Device will also increase.
6. After using the Medical Isolation Transport Device during a drill, it may be cleaned and disinfected for future use. Some disinfectants may leave a residue that can be wiped off with a clean towel.

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7. In some cases where the disease is treatable, the Medical Isolation Transport Device can be cleaned, disinfected, and readied for re-use as per direction of MDHHS, Subject Matter Experts (SME), and in consultation with manufacture.

Readying for use and patient placement:

1. Consider equipment that will be used for the patient and how it will be placed into the Medical Isolation Transport Device.
 - a. Blankets and pillows will not fit through the access ports.
 - b. IV's, defibrillator, and pulse oximetry will remain outside the Medical Isolation Transport Device with the wires and tubes snorkeled through the ports.
 - c. Keep the snorkel port closed tightly with Velcro to minimize the potential for contamination outside the Medical Isolation Transport Device.
 - d. Keep the access ports closed.
 - e. Wear exam gloves when using the glove ports.
 - f. If the gloves inside the Medical Isolation Transport Device become damaged, gently twist the glove at the port, and secure with tape to maintain air pressure and prevent contamination outside the Medical Isolation Transport Device.
2. Roll the Medical Isolation Transport Device on the gurney. Use Belts to attach to the gurney. Assure that the belts do not interfere with any moving parts of the gurney.
 - a. Restraints within the Medical Isolation Transport Device may only be used per order of a physician.
3. Connect the blower motor, inlet, and outlet filters as per manufacturer's recommendations. Turn on blower.
 - a. Assure the motor remains unobstructed.
 - b. Assure that the battery is charged and know how long the charge will last.
4. Place patient in the Medical Isolation Transport Device. Patient may be wearing gown, gloves, and mask to minimize contamination of the outside of the Medical Isolation Transport Device.
5. Place ribs/spine of the Medical Isolation Transport Device per manufacturer's instructions. Close zipper. Patient should remove mask while in Medical Isolation Transport Device.
6. Wearing clean PPE, clean and disinfect the outside of the Medical Isolation Transport Device before transport. Follow dwell times for disinfectant.
7. Transport patient.

Patient Handoff:

1. EMS removes Medical Isolation Transport Device from rig into designated "dirty" area outside the rig.
2. Hospital personnel in PPE will clean and disinfect the outside of the Medical Isolation Transport Device. Gurney will be placed so as to straddle dirty and clean area. Patient bed will be placed in clean area. Staff who have cleaned the Medical Isolation Transport Device will remain on dirty side of gurney and will assist 2nd team of PPE donned staff on clean side to move Medical Isolation Transport Device onto patient bed.

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
MEDICAL ISOLATION TRANSPORT DEVICE
(MCA OPTIONAL PROTOCOL)

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3. "Soiled" Hospital personnel (who cleaned the Medical Isolation Transport Device) will assist EMS to doff in designated "dirty area". After doffing, these hospital personnel will doff PPE per protocols.
 4. EMS will use 2nd team to clean and disinfect rig before leaving. Waste will be contained at the receiving hospital. Gurney will be cleaned and disinfected.
 5. 2nd team of Hospital personnel in clean PPE will move patient to care area.
 6. Medical Isolation Transport Device may be disposed of per manufacturer's instructions or consultation with SME.

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
TEAM SELECTION PROCEDURE
(MCA Optional Protocol)

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Section 10-17

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Team Selection Procedure

Purpose

The purpose of this procedure is to provide guidance in selecting qualified and support training of EMS personnel willing to transport a patient with known or suspected highly infectious disease including pathogens referred to as "Category A" agents.

1. The selected team members will be chosen according to
 - A. Previous physical and mental health history
 - B. Ability to be in service and away from home for an extended period of time
 - C. Knowledge of the potentially hazardous situation to which they may be placed
 - D. Additional assets of team members may include:
 - a. Able to work in a restrictive environment
 - b. Critical thinking skills
 - c. Participation in education sessions, exercises and drills
 - d. Able to follow strict guidelines to ensure the safety of the entire unit
2. It is recommended that each team member may have on file with their agency
 - A. Two or more emergency contacts
 - B. Hospital or Health care system of preference
 - C. Blood type
 - D. Religious preference
 - E. Advanced directives (if applicable)
3. Team member health status
 - A. Each team member shall be compliant with and have documentation they have passed the medical screening requirements of the agencies Respiratory Protection Program. This includes acknowledging a new history of respiratory diseases (i.e. asthma, chronic lung disease, or upper respiratory infection) that would interfere with wearing a fully enclosed respiratory device, such as a PAPR or would involve removal of the PAPR hood for medication administration.
 - B. Consideration should be given to any team member having a condition that affects them while being in an enclosed environment.
 - C. Each team member shall be free of any medical conditions that require medication administration in any less than 6 hour increments.

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4. Prior to transport:
 - A. Team members providing care in patient compartment shall have vital signs assessed prior to transport.
 - a. Vital signs must fall with preset parameters (suggestions e.g.: systolic blood pressure less than 150; diastolic blood pressure less than 90; resting heart rate less than 100).
 - B. The name of each team member who has direct contact with the patient or the patient environment will be recorded.
5. Post-transport:
 - A. Team members will receive a medical evaluation to include
 - a. Blood pressure
 - b. Heart rate
 - B. May include
 - a. Blood glucose
 - b. Assessment for dehydration
 - C. Information will be kept in the employee health file
6. Team member roles and responsibilities: The number and make up of healthcare providers needed during the transport may be based on the patient's condition and length of the transport. Below are suggestions that define roles and responsibilities of team members.
 - A. One or more **direct care providers** will remain with the patient in the back of the transport vehicle to provide care and comfort. This area is considered "contaminated" or "soiled". Team members should attempt to limit their time in full PPE to two (2) hours.
 - B. The **driver of the transport vehicle** will remain in the front cab. This area is considered "clean". Although the driver may wear PPE, the driver is considered "clean".
 - C. The **chase team** may consist of enough personnel (up to 6 to 7 employees) to accommodate crew changes, to take place at designated site and at designated intervals. The purpose of the chase team is to ensure personnel do not become fatigued or in danger of dehydration or malnourishment. The chase team may be members of another transport agency.
 - D. The chase team may consist of a **medical officer** who will not be involved in the actual transport and care of a patient; his or her sole responsibility will be to attend to any personnel that fall ill or succumb to any injury during transport.
 - E. The chase vehicle shall carry enough Personal Protective Equipment (PPE) to cover each team member on the transport team. Extra PPE shall also be carried in chase vehicle in the event of rips or tears in PPE gowns or malfunctions in PAPR operation.
 - F. It is recommended that an operations supervisor or special operation supervisor be included in the transport chase team and act as **safety officer**.

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- G. A second ambulance may follow transport vehicle and supervisor vehicle in the event of a mechanical failure during transport.
7. Post trip monitoring
- A. Any crew member that had any duration of time spent in the transport vehicle with the patient may be placed on a paid leave for a duration determined by his or her employer.
 - B. Any crew member that had any duration of time spent in the transport vehicle with the patient will be appropriately monitored according to their employer procedure.
8. Public information
- A. Any communication with the public, media or other EMS, fire or police agencies shall be handled by a designated person, as outlined in transport agency or sending facilities policies.
 - B. At no time shall any transport team member be subject to inquiries from outside agencies, media, or family members.
 - C. Team members shall follow the State of Michigan Communicable disease rules when divulging any details of patient transport.

Protocol Source/References:

Guidance for Developing A Plan for Interfacility Transport of Persons Under investigation or Confirmed Patients with Ebola Virus Disease in the United States: <http://www.cdc.gov/vhf/ebola>

Bratt, J., Robinson, A., and Alcorta, R. (n.d.). [Strategies and Considerations for the Deployment of EMS Personal Protective Equipment in Response to an Ebola Outbreak](#). (Accessed 8/1/2016.) Maryland Institute for Emergency Medical Service Systems.

Lowe et al: *Considerations for Safe EMS Transport of Patients Infected with Ebola Virus*. *Prehospital Emergency Care* October/December 2014

Michigan
SPECIAL OPERATIONS
SPECIAL PATHOGEN RESPONSE NETWORK (SPRN)
DEATH DURING TRANSPORT
(MCA Optional Protocol)

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☒ Medical Control Authorities choosing to adopt this supplement may do so by selecting this check box. Adopting this supplement changes or clarifies the referenced protocol or procedure in some way. This supplement supersedes, clarifies, or has authority over the referenced protocol.

Death During Transport

Purpose

To provide guidance for special pathogen crews when a patient suffers cardiac arrest during transport to a special pathogen treatment facility.

- I. This protocol is only for use by trained crews during the transport of a patient being handled for treatment of a special pathogen.
- II. If a patient experiences cardiac arrest during transport,
 - a. No interventions will be performed
 - b. Immediately discontinue transport
 - c. Contact Community Health Emergency Coordination Center for destination determination
 - i. Crematorium
 - ii. ME needed?
 - iii. Receiving or sending hospital
 - iv. What about when it's a county in between sending & receiving
- III. MDHHS SPRN subject matter expert will provide technical assistance in the event of a patient death using Bio Seal and body bags to complete safe and respectful handling of the decedent.
- IV. The Community Health Coordination Center (CHECC) has identified a list of crematoriums to receive the body.