MUSKEGON COUNTY

Protocols

General Treatment Protocols

Table of Contents

Trauma and Environmental Emergencies

Table of Contents

Adult Treatment Protocols

Table of Contents

MUSKEGON COUNTY

Protocols

Obstetrics and Pediatrics

Table of Contents

Adult Cardiac

Table of Contents

Pediatric Cardiac

Table of Contents

Procedures

Table of Contents

MUSKEGON COUNTY

Protocols

Procedures

Table of Contents

System

Table of Contents

MUSKEGON COUNTY

Protocols

System

Table of Contents

Medications

Table of Contents

MUSKEGON COUNTY

Protocols

Medications

Table of Contents

MUSKEGON COUNTY

Protocols

Special Operations

Table of Contents

Critical Care

Table of Contents

EMERGENCY PROTOCOLS

Table of Contents

MUSKEGON COUNTY

Protocols

General Treatment Protocols

Table of Contents

General Pre-Hospital Care

Unless otherwise stated, pediatric protocols will apply to patients less than or equal to 14 years of age or up to 36kg.

1. Assess scene safety and use appropriate personal protective equipment.
2. Complete primary survey.
3. When indicated, implement airway intervention as per the **Emergency Airway Procedure.**
4. When indicated, administer oxygen and assist ventilations as per the **Oxygen Administration Procedure.**
5. Assess and treat other life threatening conditions per appropriate protocol.
6. 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 (minimum 2 sets suggested).
7. Perform a secondary survey consistent with patient condition.
8. Follow specific protocol for patient condition.
9. Document patient care according to the **Patient Care Record Protocol**.

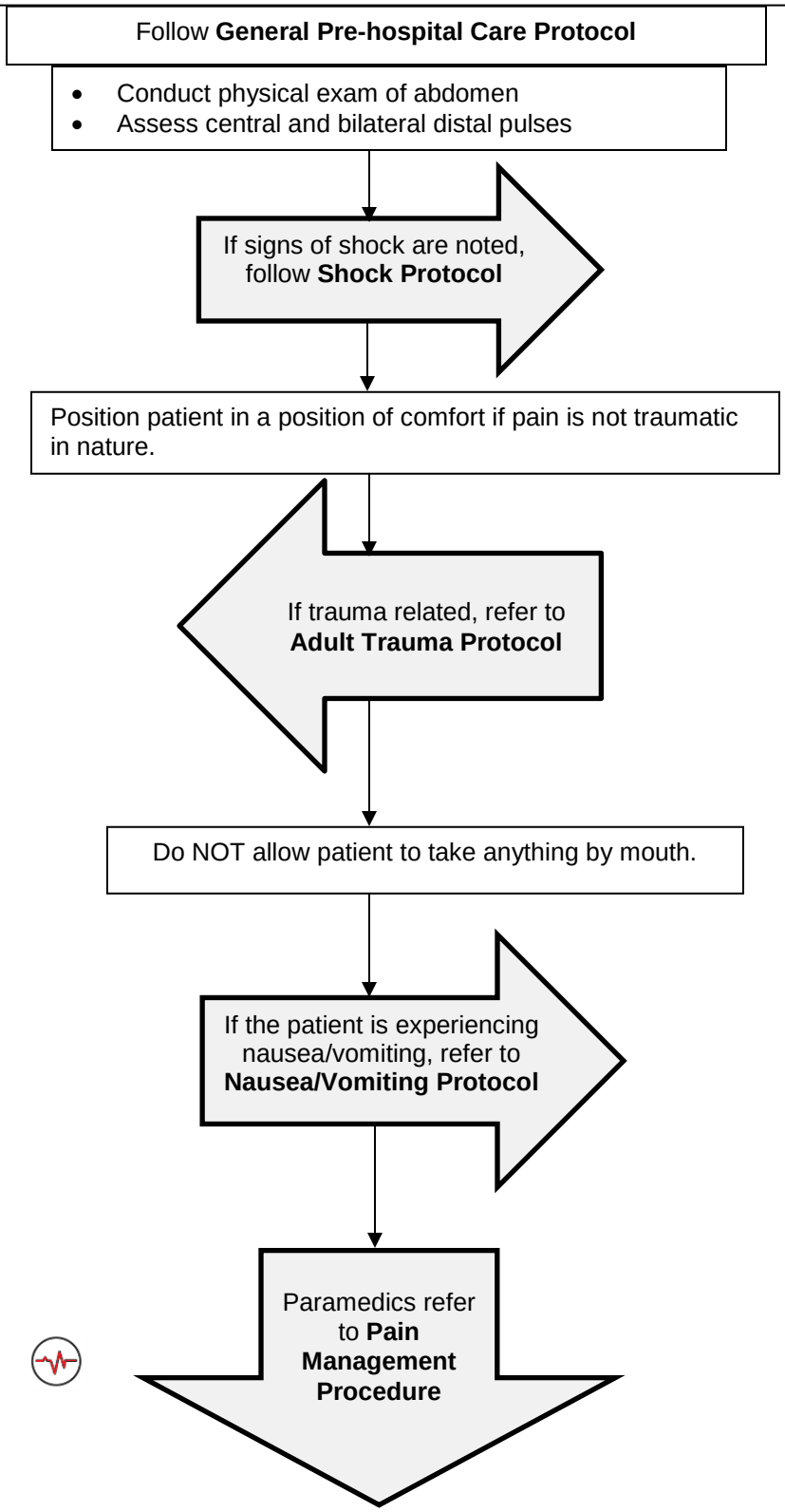

10. Establish vascular access per **Vascular Access & IV Fluid Therapy Procedure** when fluid or medication administration may be necessary.


11. Apply cardiac monitor and treat rhythm according to appropriate protocol. If applicable, obtain 12-lead ECG. Provide a copy of the rhythm strip or 12-lead ECG to the receiving facility, be sure to place patient identifiers on strip.
12. Consider use of capnography as appropriate and if available, per **Waveform Capnography Procedure**.

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

Abdominal Pain (Non-traumatic)

1. Follow **General Pre-hospital Care Protocol**.
2. Conduct physical exam of abdomen including assessment of central and bilateral distal pulses.
3. If symptoms of shock present refer to **Shock Protocol**.
4. Position patient in a position of comfort if pain is non-traumatic. If trauma related, refer to **Adult Trauma Protocol.**
5. Do not allow patient to take anything by mouth.
6. If patient is experiencing nausea and vomiting refer to **Nausea/Vomiting Protocol**.
7. Treat pain per **Pain Management Procedure**.


Follow **General Pre-hospital Care Protocol**
Conduct physical exam of abdomen
Assess central and bilateral distal pulses
If signs of shock are noted, follow **Shock Protocol**
Position patient in a position of comfort if pain is not traumatic in nature.
If trauma related, refer to **Adult Trauma Protocol**
Do NOT allow patient to take anything by mouth.
If the patient is experiencing nausea/vomiting, refer to **Nausea/Vomiting Protocol**
Paramedics refer to **Pain Management Procedure**

Nausea & Vomiting

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

2. Administer Ondansetron (Zofran) 4mg ODT, per MCA selection.

ODT Ondansetron included?

☑YES ☐NO

3. For signs of dehydration, administer NS IV/IO fluid bolus up to 1 liter, wide open.
   a. Pediatrics receive 20 ml/kg 

4. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state. Continue IV/IO fluid bolus to a maximum of 2 liters.
   a. Pediatrics repeat dose of 20 ml/kg 

5. Administer Ondansetron (Zofran)
   a. Adults 4mg IV/IM (if ODT not already administered).
   b. Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 

6. Repeat Ondansetron (Zofran)
   a. Adults 4mg IV/IM (if ODT not already administered).
   b. Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 

Follow **General Pre-hospital Care Protocol**

Administer **ODT Ondansetron 4 mg**, Per MCA Selection

ODT Ondansetron included?

☑YES ☐NO

- Administer NS IV/IO fluid bolus up to 1 liter, wide open
- Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state
- Continue IV/IO fluid boluses to a maximum of 2 liters

Administer **Ondansetron 4 mg IV/IM** for adults or **0.1mg/kg** for pediatrics if ODT not already administered

Contact Medical Control

Possible order: repeat Ondansetron (Zofran) 4 mg IV/IM for adults, or 0.1 mg/kg for pediatrics

Syncope

1. Assess for mechanism of injury, if trauma sustained, refer to **General Trauma Protocol.**
2. Follow **General Pre-hospital Care Protocol.**
3. Position patient
   A. If third trimester pregnancy, position patient left lateral recumbent.
   B. Supine for all other patients
4. If patient's mental status remains altered, refer to **Altered Mental Status Protocol**.

5. For signs of dehydration or hypotension, administer NS IV fluid bolus.
   A. Adults up to 1 liter
   B. Pediatrics up to 20 mL/kg
   C. Titrate to normotensive BP

6. Obtain 12-lead ECG per **12 Lead ECG Procedure** (May be a basic skill based on MCA selection). If ECG indicates cardiac event or dysrhythmia, refer to Appropriate Cardiac Protocol.

7. Additional IV fluids as ordered.

Follow **General Prehospital Care Protocol**

Any Trauma?

Yes → Refer to **General Trauma Protocol**

No

Position Patient
3rd Trimester? Left Lateral Recumbent
All others - Supine

Still Altered?

Yes → Refer to **Altered Mental Status Protocol**

No

For Signs of Hypotension, administer NS IV fluid bolus

- Adults up to 1 liter
- Pediatrics up to 20 ml/kg
- Titrate to Normotensive BP

Obtain 12 Lead ECG per **12 Lead ECG Procedure**
If cardiac event or dysrhythmia, refer to **Appropriate Cardiac Protocol**

Additional IV Fluids as Ordered

Shock

Assessment: Consider etiologies of shock

1. Follow **General Pre-hospital Care Protocol**.
2. Control major bleeding per **Soft Tissue and Orthopedic Injuries Protocol**.
3. Remove all transdermal patches using gloves.
4. Prompt transport following local MCA protocol.
5. Special consideration
   A. If 3rd trimester pregnancy, position patient left lateral recumbent.

6. Obtain vascular access (in a manner that will not delay transport).
   A. The standard NS IV/IO fluid bolus volume will be up to 1 liter, wide open, repeated as necessary, unless otherwise noted by protocol. IV/IO fluid bolus is contraindicated with pulmonary edema.
   B. Fluid should be slowed to TKO when SBP greater than 90 mm/Hg.
   C. For pediatrics, fluid bolus should be 20 mL/kg, and based on signs/symptoms of shock.
7. Consider establishing a second large bore IV of Normal Saline en route to
8. Obtain 12-lead ECG, if suspected cardiac etiology.
9. If anaphylactic shock, refer to the **Anaphylaxis/Allergic Reaction Protocol.**
10. For possible hemorrhagic shock, per MCA selection, refer to **Tranexamic Acid Protocol.**

MCA Adoption of Tranexamic Acid Protocol

☐ YES ☑ NO

11. Additional IV/IO fluid bolus
    A. Up to 2L total for adult
    B. Up to 40mL per kg total for pediatric.

12. If hypotension persists after IV/IO fluid bolus, administer Epinephrine by push dose (dilute boluses).
    A. Prepare by combining 1 mL of Epinephrine 1 mg/10 mL with 9 mL NS
    B. Adults
       1. Administer 10-20 mcg (1-2 mL Epinephrine 10 mcg/mL)
       2. Repeat every 3 to 5 minutes
       3. Titrate to SBP greater than 90 mm/Hg
    C. Pediatrics
       1. Administer 1 mcg/kg (0.1 mL/kg Epinephrine 10 mcg/mL)
       2. Maximum dose 10 mcg (1 mL)
       3. Repeat every 3-5 minutes

Follow **General Prehospital Care Protocol**

Control major bleeding per **Soft Tissue and Orthopedic Injuries Protocol**

- Remove all transdermal patches using gloves
- Position patient appropriately (3rd trimester pregnancy, left lateral recumbent)

Transport following **MCA Protocol**

Obtain vascular access (without delaying transport)
- IV bolus NS, up to 1 liter (may repeat as noted)
- Pediatrics up to 20 mL/kg
- Titrate to Normotensive BP and signs/symptoms of shock

Obtain 12 Lead, if Cardiac Etiology Suspected

If anaphylactic shock, refer to **Anaphylaxis/ Allergic Reaction Protocol**

MCA Adoption of Tranexamic Acid Protocol?

☐ Yes ☑ No

If possible hemorrhagic shock, per MCA selection, refer to **Tranexamic Acid Protocol**

Additional IV/IO fluid bolus
- Up to 2 L total for adult
- Up to 40 mL/kg total for pediatric

If hypotension persists after fluid bolus, administer Epinephrine by push dose

- Prepare (10mcg/ml by adding 1 mL of 1mg/10mL Epinephrine in 9mL NS then

Adult
- Administer 1-2 mL every 3 to 5 minutes, titrating to SBP >90 mm/Hg

Pediatric
- Administer 0.1 mL/kg (1 mcg/kg), maximum dose 10 mcg (1 mL), repeat every 3-5 minutes titrating to signs/symptoms of shock

Anaphylaxis/Allergic Reaction

1. Follow **General Pre-hospital Care Protocol**.
2. Determine substance or source of exposure, remove patient from source if known and able.
3. In cases of severe allergic reaction, wheezing or hypotension, administer epinephrine via auto-injector.
4. Assist the patient in administration of their own epinephrine auto-injector, if available.

5. *__**MCA Approval for MFR epinephrine auto-injector (Agency Option).**__

__MCA Approval of Epinephrine Auto-injector for Select MFR Agencies__
(Provide participating agency list to BETP)

☑ YES ☐ NO

   a. If child appears to weigh less than 10 kg (approx. 20 lbs.), contact medical control prior to epinephrine, if possible.
   b. If child weighs between 10-30 kg (approx. 60 lbs.); administer pediatric epinephrine auto-injector.
   c. For adults and children weighing greater than 30 kg; administer epinephrine auto-injector.
   d. May repeat at 3-5 minute intervals if the patient remains hypotensive, if available.

6. Albuterol may be indicated. Refer to **Nebulized Bronchodilators Procedure**.

7. Administer a Normal Saline IV/IO fluid bolus.
   a. The standard NS IV/IO fluid bolus volume will be up to 1 liter, wide open, repeated as necessary, unless otherwise noted by protocol. IV/IO fluid bolus is contraindicated with pulmonary edema.
   b. Fluid should be slowed to TKO when SBP greater than 90 mm/Hg.
   c. For pediatrics, fluid bolus should be 20 mL/kg, and based on signs/symptoms of shock.

8. In cases of suspected anaphylaxis with hypotension, severe respiratory distress, and/or angioedema, administer Epinephrine.
   a. Adult (1mg / 1mL), 0.3 mg (0.3 mL) IM. May repeat 1 time in 3-5 minutes if patient is still hypotensive.
   b. Pediatric
      i. For children less than 10 kg (approx. 20 lbs.), contact medical control prior to epinephrine if possible.
      ii. For children weighing less than 30 kg (approx. 60 lbs.); administer Epinephrine (concentration of 1mg/1mL) 0.15 mg (0.15mL) IM OR administer pediatric epinephrine auto-injector, if available.
      iii. Child weighing 30 kg or greater; administer Epinephrine (concentration of 1mg/1mL) 0.3 mg (0.3 mL) IM OR via epinephrine auto-injector if available.
      iv. May repeat 1 time in 3-5 minutes if patient is still hypotensive.

9. If patient is symptomatic, administer Diphenhydramine.
   a. Adult 50 mg IM or IV/IO.
   b. Pediatric 1 mg/kg IM/IV/IO (maximum dose 50 mg).
10. Per MCA selection, administer bronchodilator per **Nebulized Bronchodilators Procedure**.
11. Per MCA Selection, administer Prednisone **OR** methylprednisolone.

Medication Options:

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

☑ **Methylprednisolone Adult 125 mg IV or Pediatric 2 mg/kg IV (max 125 mg)**

12. For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and reserved for when a PO route is inappropriate.
13. If patient remains hypotensive after treatment, refer to **Shock Protocol**.
14. If patient is symptomatic after treatment without hypotension.
    a. Additional epinephrine via auto-injector.
    b. Additional epinephrine (1mg / 1 mL), 0.3 mg (0.3 mL) IM.

*MCA approval required for MFR auto-injector use.

Follow **General Prehospital Care Protocol**

Determine source of exposure, remove from source, if able

Severe reaction, wheezing, or hypotension?

Yes

Assist patient with own Epinephrine Autoinjector, if available

No

Administer Epinephrine Autoinjector

MCA Approval of Epinephrine Autoinjector for MFR Agencies

☑ Yes ☐ No

- If child appears to weigh less than 10 kg (approx. 20 lbs.), contact medical control prior to epinephrine, if possible.
- If child weighs between 10-30 kg (approx. 60 lbs.); administer pediatric epinephrine auto-injector.
- For adults and children weighing greater than 30 kg; administer epinephrine auto-injector.
- May repeat at 3-5 minute intervals if the patient remains hypotensive, if available.

Albuterol may be indicated, refer to **Nebulized Bronchodilators Procedure**

Administer Normal Saline Fluid Bolus

- Adults up to 1 liter, repeated as necessary, unless otherwise noted.
- Pediatrics up to 20 ml/kg
- Titrate to Normotensive BP

Administer Epinephrine (1 mg/ 1 mL)

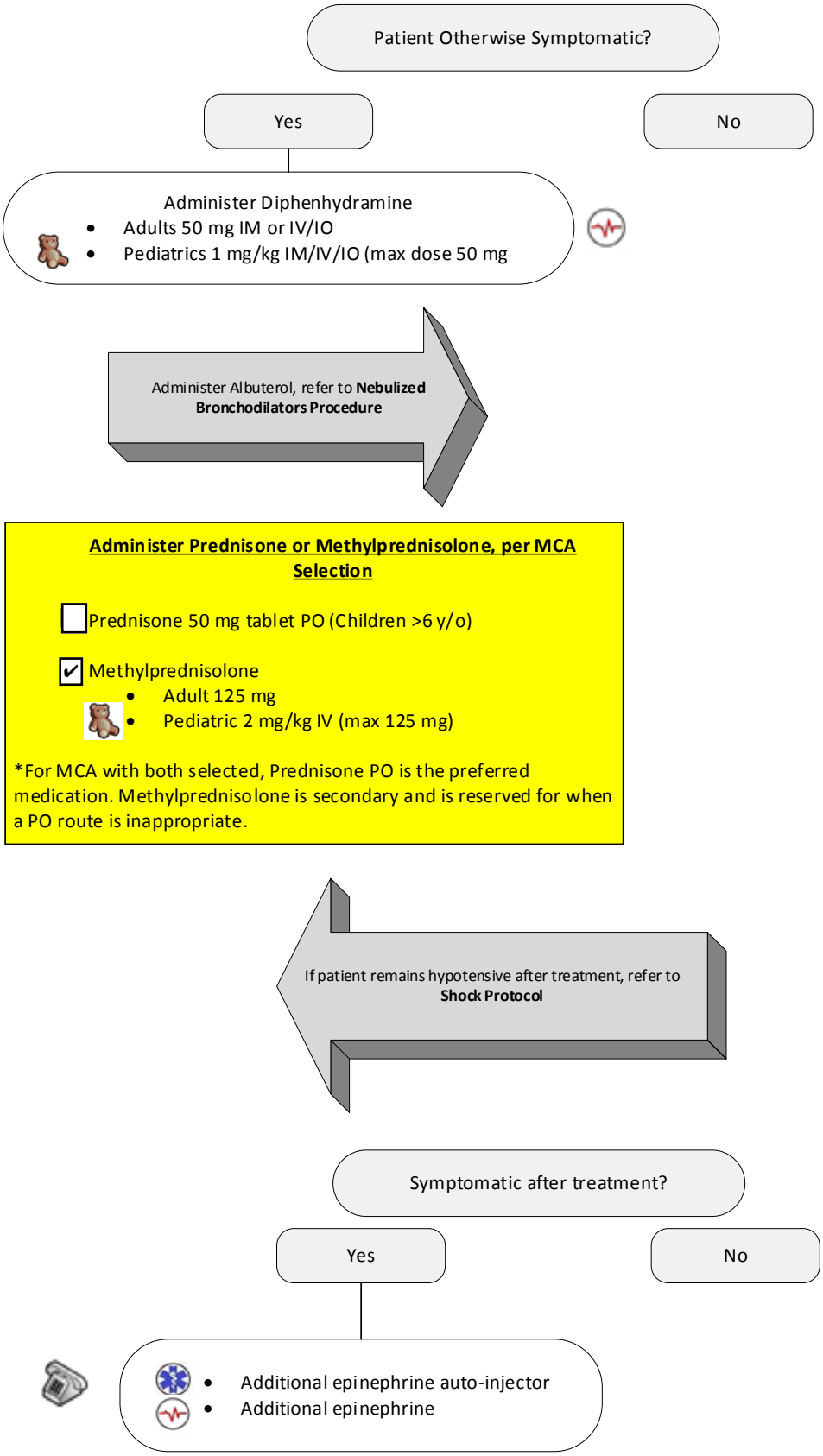
Adult

- 0.3 mg (0.3 ml) IM

Pediatrics

- Less than 10 kg Contact Medical Control
- Between 10-30 kg, administer 0.01 mg/ kg IM or pediatric autoinjector, if available
- 30 kg and great, administer 0.3 mg IM or epinephrine autoinjector, if available

May repeat 1 time in 3-5 minutes if patient remains hypotensive


Patient Otherwise Symptomatic?
Yes
No
Administer Diphenhydramine
Adults 50 mg IM or IV/IO
Pediatrics 1 mg/kg IM/IV/IO (max dose 50 mg
Administer Albuterol, refer to **Nebulized Bronchodilators Procedure**
Administer Prednisone or Methylprednisolone, per MCA Selection
Prednisone 50 mg tablet PO (Children >6 y/o)
Methylprednisolone
Adult 125 mg
Pediatric 2 mg/kg IV (max 125 mg)
*For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and is reserved for when a PO route is inappropriate.
If patient remains hypotensive after treatment, refer to **Shock Protocol**
Symptomatic after treatment?
Yes
No
Additional epinephrine auto-injector
Additional epinephrine

MFR & Basic EMT-Epinephrine Study

Adopting MCAs will have "MFR", "EMT", "BOTH", or "ALS Only" under their MCA name. If no designator is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
BOTH			***BOTH***		***ALS Only***	***BOTH***
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
BOTH	***BOTH***	***BOTH***	***BOTH***	***BOTH***	***BOTH***	

MCA's adopting this System Protocol are permitting the utilization of IM epinephrine by designated provider levels in any state protocol which states, administer "Epinephrine Auto-injector"

Adult dosage: Administer Epinephrine 1 mg/mL, 0.3 mg (0.3 mL) IM, rather than auto-injector
Pediatric dosage: Administer Epinephrine 1mg/mL, 0.15 mg (0.15 mL) IM, rather than pediatric auto-injector

This protocol modifies the following state protocols:

- Anaphylaxis/Allergic Reactions (Section 1.6)
- Adult Respiratory Distress (Section 3.3)
- Pediatric Respiratory Distress, Failure or Arrest (Section 4.5)

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 Protocol.**

Post-Medical Control

2. Administer fluid bolus NS.
3. Assist with administration of patient's own hydrocortisone sodium succinate (Solu-Cortef)
    a. Adult: 100 mg IV
    b. Pediatric: 1-2 mg/kg IV

OR

4. Per MCA Selection, administer Prednisone **OR** Methylprednisolone

Medication Options:

☐ Prednisone - 50 mg tablet PO (ages 6 and up)

☑ Methylprednisolone - Adults 125 mg IV or
Pediatrics 2 mg/kg IV

5. For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and reserved for when a patient can't take a PO medication.
6. Transport
7. Notify Medical Control of patient's medical history.
8. Refer to **Altered Mental Status Protocol.**

Behavioral Health Emergencies

1. Assure scene is secure.
2. Follow **General Pre-hospital Care 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**.
13. If the patient is severely agitated, combative/aggressive, and shows signs of sweating, delirium, elevated temperature, and lack of fatiguing, refer to **Excited Delirium 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)

Return of Spontaneous Circulation (ROSC)

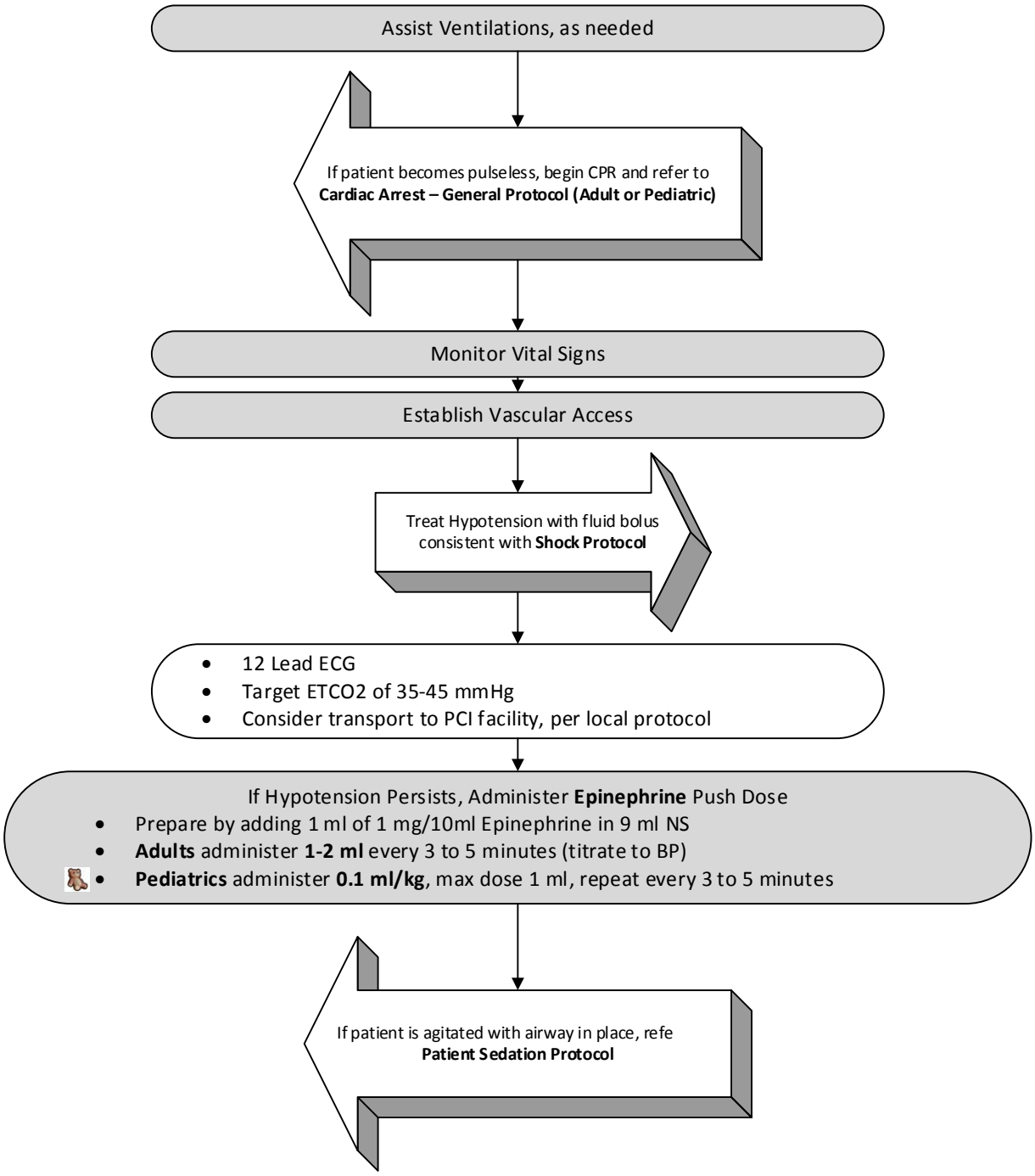
This protocol should be followed for all cardiac arrests with ROSC. If an arrest is of a known traumatic origin, refer to the **Traumatic Arrest Protocol** and **MCA Transport Protocol**. If it is unknown whether the arrest is traumatic or medical, consider other treatable causes. Initiate ALS response if available.

1. If ventilation assistance is required, ventilate at 10-12 breaths per minute. Do not hyperventilate.
2. Reassess patient, if patient becomes pulseless
    a. Begin CPR
    b. Follow **Adult** or **Pediatric Cardiac Arrest General Protocol**.
3. Monitor vital signs.
4. Check blood glucose (MFR, if MCA approved).
5. Start an IV/IO NS KVO**.**
6. Treat hypotension (SBP less than 90 mm/Hg) with an IV/IO fluid bolus consistent with **Shock Protocol**.
7. Perform 12- lead ECG (Per MCA selection, may be BLS skill per **12 Lead ECG Procedure**)
8. If ventilation assistance is required, target ETCO2 of 35-40 mm Hg.
9. Consider Transport to a facility capable of Percutaneous Coronary Intervention (PCI) per MCA protocol.
10. If hypotension persists after IV/IO fluid bolus, administer Epinephrine by push dose (dilute boluses).
    a. Prepare (10 mcg/mL) by adding 1mL of 1mg/10mL Epinephrine in 9mL NS, then
    b. Adults
        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
    c. Pediatrics
        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
11. If patient is agitated with advanced airway in place, refer to **Patient Sedation 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 oxyhemoglobin saturation to maintain a saturation of ≥94% but <100%. Titrate ETCO2 between 34-45 mmHg.
2. Consider extubation only if wide awake, following commands, and unable to tolerate endotracheal tube.

This Protocol Should be Followed for all Cardiac Arrests with ROSC



MUSKEGON COUNTY

Protocols

Trauma and Environmental Emergencies

Table of Contents

Trauma Destination Protocol

PURPOSE: This protocol was developed to assist the emergency responder to determine what constitutes a trauma patient and where to transport the trauma patient. 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.

This protocol applies to all patients who are seriously injured or potentially seriously injured. The criteria listed below serve to identify the injured patients who are likely to require comprehensive trauma care. This protocol is meant to supplement, but not replace, the judgment of the EMS personnel at the scene.

An **ADULT** trauma patient is an injured patient that is, or reasonably appears to be 15 years of age or older and meets any of the following criteria or when in the judgment of EMS personnel, evidence for potential serious injury exists. A **PEDIATRIC** trauma patient is an injured or potentially injured patient that is, or reasonably appears to be, under the age of 15 who meets any of the following criteria or when in the judgment of EMS personnel evidence for potential serious injury exists.

TRAUMA TRIAGE DESTINATION DECISIONS

1. Any **ADULT** trauma patient meeting the physiologic or anatomic criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. Any **PEDIATRIC** trauma patient meeting the physiologic or anatomic criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. When circumstances allow, pediatric patients should be transported to a pediatric trauma center. Appropriate centers are determined by the Medical Control Authority as indicated in the **West Michigan Regional Medical Control Consortium Trauma Destination Reference Document**. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

   PHYSIOLOGIC CRITERIA

   Vital signs & level of consciousness

   - Glasgow Coma Scale <14
   - Systolic Blood Pressure <90 mm Hg
   - Respiratory rate <10 or >29 breaths per minute, or need for ventilatory support

   Pediatric Vital Sign Reference

Hypotension	**Respiratory Distress**
0-5 months: SBP < 60	0-5 months: RR < 20
≥ 6 mos – 5 yrs: SBP < 70	≥ 6 mos – 12 yrs: RR < 16
≥ 6 yrs: SBP < 80	≥ 13 yrs: RR < 12

   ANATOMIC CRITERIA

   - All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
   - Chest wall instability or deformity (e.g. flail chest)
   - Two or more proximal long bone fractures (femur and or humerus)
   - Crush, degloved, mangled or pulseless extremity
   - Amputation proximal to wrist or ankle
   - Pelvic fracture
   - Open or depressed skull fracture
   - Paralysis

2. Any **ADULT** trauma patient meeting the mechanism of injury or special considerations criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. Any **PEDIATRIC** trauma patient meeting the mechanism of injury or special considerations criteria should be transported to the closest appropriate level trauma center, bypassing a non-trauma facility or a lower level facility may be acceptable. When circumstances allow, pediatric patients should be transported to a pediatric trauma center. Appropriate centers are determined by the Medical Control Authority as indicated in the **West Michigan Regional Medical Control Consortium Trauma Destination Reference Document**. Notify the trauma center as soon as possible, including inclusion criteria and ETA.

MECHANISM OF INJURY

Mechanism and evidence of high-energy impact

- Falls
  - **ADULT** >20 feet (one story is equal to 10 ft.)
  - **PEDIATRIC** > 10 feet (one story = 10 ft.) or two or three times height of the child
- High-risk auto crash
  - Intrusion, including roof: > 12 in. occupant site; >18 in. any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with a high risk injury
- Auto vs. pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact
- Motorcycle/Recreational Vehicle crash > 20 mph

SPECIAL CONSIDERATIONS

<u>Special patient or system considerations</u>

- Older Adults
  - Risk of injury/death increases after age 55
  - SBP < 110 mm Hg may represent shock after age 65
  - Low impact mechanisms (e.g. Ground level falls) may result in severe injury
- Children should be triaged preferentially to pediatric capable trauma centers
- Anticoagulation and bleeding disorders
  - Patients with head injury are at high risk for rapid deterioration

(continues on next page)

SPECIAL CONSIDERATIONS (Continued)

- Burns
  - Without other trauma mechanism: triage to burn facility
  - With trauma mechanism: triage to trauma center
- Pregnancy >20 weeks
- Any other injuries felt by EMS personnel to require specialized trauma care

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, stabilization and subsequent transfer.

West Michigan Regional MCC

TRAUMA AND ENVIRONMENTAL
Trauma Destination Protocol

Measure Vital signs and level of consciousness:

Glasgow Coma Scale	≤13
Systolic Blood Pressure (mmHg)	<90 mmHg
Respiratory Rate	<10 or >29 breaths per minute, or need for ventilatory support (<20 in infants aged <1 year)

Pediatric Vital Sign Reference

Hypotension:	**Respiratory Distress:**
0-5 months: SBP < 60	0-5 months: RR < 20
≥ 6 mos – 5 yrs: SBP < 70	≥ 6 mos – 12 yrs RR: < 16
≥ 6 yrs: SBP < 80	≥ 13 yrs : RR < 12

YES → **Transport to a trauma center.** Steps 1 and 2 attempt to identify the most seriously injured patients. These patients should be transported preferentially to the highest level of care within the defined trauma system (level 1 or 2).

No

Assess anatomy of injury:

- All penetrating injuries to head, neck, torso and extremities proximal to elbow or knee
- Chest wall instability of deformity
- Two or more proximal long-bone fractures
- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fracture
- Open or depressed skull fracture
- Paralysis

YES → **Transport to a trauma center**, which, depending upon the defined trauma system, need not be the highest level trauma center.

No

Assess mechanism of injury and evidence of high-energy impact:

- **Falls**
  - Adults: > 20 feet (one story is equal to 10 feet)
  - Children: > 10 feet or two or three times the height of the child
- **High-risk auto crash**
  - Intrusion, including roof: >12 inches occupant site; > 18 inches any site
  - Ejection (partial or complete) from automobile
  - Death in same passenger compartment
  - Vehicle telemetry data consistent with a high risk of injury
- **Auto vs Pedestrian/bicyclist thrown, run over, or with significant (>20 mph) impact**
- **Motorcycle/Recreational Vehicle crash >20 mph**

YES → **Transport to a trauma center**, or hospital capable of timely and thorough evaluation and initial management of potentially serious injuries. Consider consultation with medical control.

No

Assess special patient or system considerations:

- **Older Adults**
  - Risk of injury/death increases after 55 years
  - SBP <110 may represent shock after age 65
  - Low impact mechanisms (e.g. ground level falls) may result in severe injury
- **Children**
  - Should be triaged preferentially to pediatric capable trauma centers
- **Anticoagulants and bleeding disorders**
  - Patients with head injury are at high risk for rapid deterioration
- **Burns**
  - Without other trauma mechanism: triage to burn facility
  - With trauma mechanism: triage to trauma center
- **Pregnancy > 20 weeks**
- **EMS provider judgement**

NO → **TRANSPORT ACCORDING TO PROTOCOL**

When in doubt, transport to a trauma center.

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 facility.

Aliases: Trauma, injury, injuries

GENERAL TRAUMA MANAGEMENT

1. Follow **General Pre-hospital Care Protocol**.
2. Stabilize spinal column while opening the airway, determine level of consciousness. Refer to **Spinal Injury Assessment Protocol**.
3. Manage airway and ventilation per **Emergency Airway Procedure**. Avoid Hyperventilation/Hyperoxygenation.
4. Control major external bleeding. Refer to **Soft Tissue and Orthopedic Injuries Protocol.**
5. If shock present, refer to **Shock Protocol**.
6. Refer to **Mass Casualty Incidents Protocol** if appropriate.
7. Initiate transport according to the **Trauma Triage Protocol** or refer to applicable **MCA Protocol**.
8. Alert receiving hospital as soon as appropriate. Include pertinent trauma triage criteria.
9. Obtain vascular access (in a manner that will not delay transport).
10. Refer to **Pain Management Procedure**.

CHEST INJURY

1. Control hemorrhage per **Soft Tissue and Orthopedic Injuries Protocol**.
2. Assess, monitor, and treat life threatening respiratory problems.
    A. Administer oxygen to maintain a pulse oximetry (if available) of 94% to 99%. *Avoid positive pressure ventilation if possible.*
    B. All open and/or sucking chest wounds should be covered with an FDA **and** MCA approved occlusive seal device, or improvised occlusive dressing.
        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.**

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.

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

- Stabilize spinal column while opening airway, determine level of consciousness. Refer to **Spinal Injury Assessment Protocol.**
- Manage airway ventilation per **Emergency Airway Procedure.** Avoid Hyperventilation/Hyperoxygenation.
- Control major external bleeding. Refer to **Soft Tissue and Orthopedic Injuries Protocol**.
- If shock present, refer to **Shock Protocol.**

Refer to **Mass Casualty Protocol** as appropriate

Initiate transport according to **Trauma Triage and Destination Protocol** or refer to applicable **MCA Protocol**

- Obtain vascular access (in a manner that will not delay transport).

Refer to **Pain Management Procedure as needed**

If hypotensive, refer to **Shock Protocol**

Chest Injury

Control hemorrhage per **Soft Tissue and Orthopedic Injuries Protocol**.

Assess, monitor, and treat life threatening respiratory problems.

- Administer oxygen to maintain a pulse oximetry (if available) of 94% to 99%. *Avoid positive pressure ventilation if possible.*
- All open and/or sucking chest wounds should be covered with an FDA **and** MCA approved occlusive seal, or improvised occlusive dressing.
  - Release dressing if worsened shortness of breath, or signs of tension pneumothorax.

If tension pneumothorax suspected, refer to **Pleural Decompression Procedure**.

Abdominal Injury

- 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**.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

Burns

General Treatment:

1. Follow **General Pre-hospital Care Protocol**.
2. If evidence of possible airway burn, consider aggressive airway management per **Emergency Airway Procedure.**
3. Administer 100% O2 to all patients rescued from a confined space fire (i.e., building, automobile) regardless of pulse oximetry reading.
4. Determine burn extent & severity (rule of nines or palm = 1%).
5. Keep patient warm and avoid hypothermia.
6. If possibility of cyanide poisoning, refer to **Cyanide Exposure Protocol.**

THERMAL BURNS:

1. Stop the burning process. Remove smoldering and non-adherent clothing. Irrigate with sterile water or saline, if available.
2. Consider potential for secondary contamination (i.e., methamphetamine).
3. Assess and treat associated trauma.
4. Remove any constricting items.
5. If burn is
    a. Less than 15% of total body surface area (TBSA), consider covering with wet dressings for comfort.
    b. More than 15% of total body surface area (TBSA), cover wounds with dry clean dressings to avoid hypothermia.

CHEMICAL BURNS:

1. Protect personnel from contamination.
2. Remove all clothing and constricting items.
3. Decontaminate patient prior to transport, brushing off dry chemicals prior to irrigation.
4. Assess and treat for associated injuries.
5. Evaluate for systemic symptoms, which might be caused by chemical contamination.
6. Notify receiving hospital of possible chemical contamination.
7. 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 Protocol** and **Spinal Precautions Procedure** 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.
2. Administer NS IV/IO fluid bolus up to 1 liter wide open for hypotension or burn greater than 15% TBSA. Repeat as indicated.  (20 ml/kg for pediatrics)

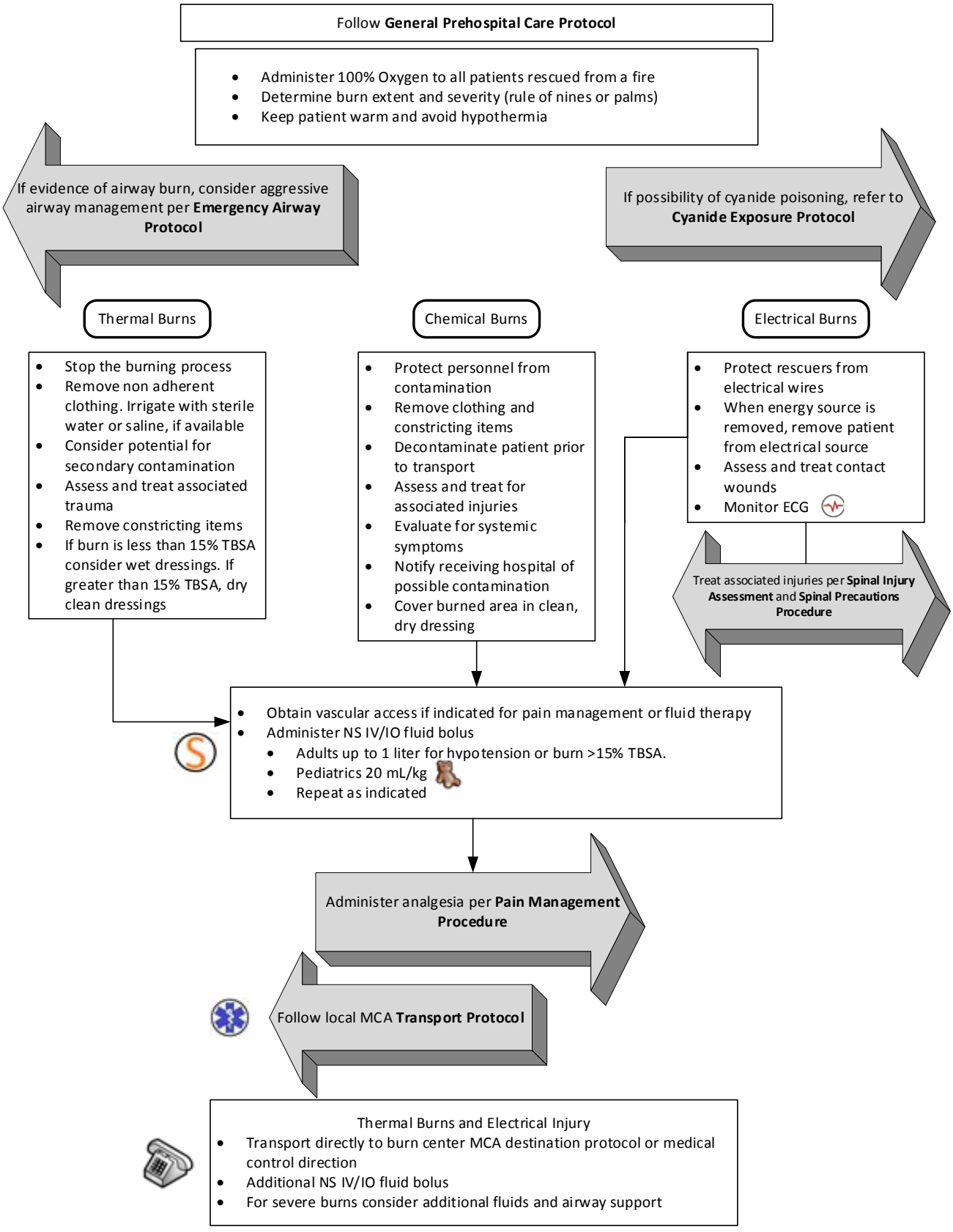
3. Administer Analgesic Medication. Refer to **Pain Management Procedure.**

Transport:

4. Follow local MCA **Transport Protocol**.
5. Special Transport Considerations
    a. The most appropriate facility may be a trauma center when there is airway or respiratory involvement, or when multi-trauma or blast injury is suspected.
    b. Consider transport directly to burn center if BSA > 20% partial thickness, BSA > 10% full thickness, involvement of hands/feet, genitalia, face; circumferential burns
    c. Consider air ambulance transportation for long transport times, pain control requiring deep sedation, and airway concerns that might necessitate advanced airway management.

Thermal Burns and Electrical Injury:

1. Transport directly to burn center per MCA destination protocol or medical control direction.
2. Additional NS IV/IO fluid bolus, up to 2 liters, wide open**.**
3. For severe burns, consider:
    a. Additional fluid needs
    b. Airway support


Follow **General Prehospital Care Protocol**
Administer 100% Oxygen to all patients rescued from a fire
Determine burn extent and severity (rule of nines or palms)
Keep patient warm and avoid hypothermia
If evidence of airway burn, consider aggressive airway management per **Emergency Airway Protocol**
If possibility of cyanide poisoning, refer to **Cyanide Exposure Protocol**
Thermal Burns
Stop the burning process
Remove non adherent clothing. Irrigate with sterile water or saline, if available
Consider potential for secondary contamination
Assess and treat associated trauma
Remove constricting items
If burn is less than 15% TBSA consider wet dressings. If greater than 15% TBSA, dry clean dressings
Chemical Burns
Protect personnel from contamination
Remove clothing and constricting items
Decontaminate patient prior to transport
Assess and treat for associated injuries
Evaluate for systemic symptoms
Notify receiving hospital of possible contamination
Cover burned area in clean, dry dressing
Electrical Burns
Protect rescuers from electrical wires
When energy source is removed, remove patient from electrical source
Assess and treat contact wounds
Monitor ECG
Treat associated injuries per **Spinal Injury Assessment** and **Spinal Precautions Procedure**
Obtain vascular access if indicated for pain management or fluid therapy
Administer NS IV/IO fluid bolus
Adults up to 1 liter for hypotension or burn >15% TBSA.
Pediatrics 20 mL/kg
Repeat as indicated
Administer analgesia per **Pain Management Procedure**
Follow local MCA **Transport Protocol**
Thermal Burns and Electrical Injury
Transport directly to burn center MCA destination protocol or medical control direction
Additional NS IV/IO fluid bolus
For severe burns consider additional fluids and airway support

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 or there is entrapment of patient with history of previous cardiac or renal disease or dialysis treatment.

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 Protocol**, identify and treat life threats.
2. Assess for signs of Compartment Syndrome or Crush Syndrome.
3. Use tourniquet as indicated (see **Tourniquet Application** procedure).


4. Establish large bore IV(s) and infuse one (1) to two (2) liters of Normal Saline *just prior to removal of patient when practical.*


5. Treat patient pain per the **Pain Management Procedure**.
6. Initiate cardiac monitoring and assess for hyperkalemia, i.e. wide QRS or peaked T waves.
7. Perform 12-Lead ECG, if conditions allow.
8. Administer **Oxygen** to patient if environment allows.
9. Administer **Sodium Bicarbonate**
    a. Adults 100 mEq IVP prior to extrication and 50 mEq/hr IVPB or slow IVP if extrication is prolonged and hyperkalemia is suspected.
    
    b. Pediatrics 1 mEq/kg (max dose 50 mEq) IV
10. Consider **Albuterol** 2.5 mg via NMT (nebulized mist treatment) during extrication process.
11. Administer **Calcium Chloride** if hyperkalemia is suspected (peaked T waves, widened QRS, hypotension)
    a. Adults 1 gram slow IVP over 5 minutes
    
    b. Pediatrics 20 mg/kg, max dose 1 gram over 5 minutes

Soft Tissue & Orthopedic Injuries

1. Follow **General Pre-hospital Care Protocol**.
2. Control bleeding.
    A. Utilize direct pressure.
    B. Consider early tourniquet use (refer to **Tourniquet Application Procedure**).
    C. Consider FDA **and** 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.
3. If appropriate, maintain spinal precautions for patient per **Spinal Injury Assessment Protocol.**
4. Assess pain on 1-10 scale.
5. Immobilize/splint orthopedic injuries as appropriate.
    A. Special Considerations
        i. Consider traction splinting for 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.
        iv. Dress open fractures.
6. Partial/complete amputations
    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. Frequent monitoring of circulation, sensation, and motion distal to the injury during transport.
7. For severe crush injuries, refer to **General Crush Injury Protocol**.
8. Impaled objects are left in place and stabilized. Removal of impaled objects is only with approval of medical control.
9. Follow local MCA transport protocol.
10. Provide pain management per **Pain Management Procedure.**
11. Consideration sedation per **Patient Sedation Procedure**.

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

Control bleeding
- Utilize direct pressure
- Consider early tourniquet use (refer to **Tourniquet Application Procedure**).
- Consider FDA **and** MCA approved hemostatic agents and hemorrhage control devices.
- Consider use of pressure dressings with deep wound packing.

If appropriate, stabilize cervical spine and immobilize patient per **Spinal Injury Assessment Protocol**.

Consider tourniquet use when applicable (refer to **Tourniquet Application Procedure**).

Immobilize/splint orthopedic injuries as appropriate
- Special Considerations.
  - Consider traction splinting for femur fractures (excluding hip/femoral neck).
  - Straighten severely angulated fractures if distal extremity has signs of decreased perfusion.
  - Evaluate and document neurovascular status before and after splinting.
  - Dress open fractures.

Provide pain management per **Pain Management Procedure**.

For severe crush injuries, refer to **General Crush Injury Protocol.**

Impaled objects are left in place & stabilized. Removal of impaled objects is only with approval of medical control.

Contact Medical Control

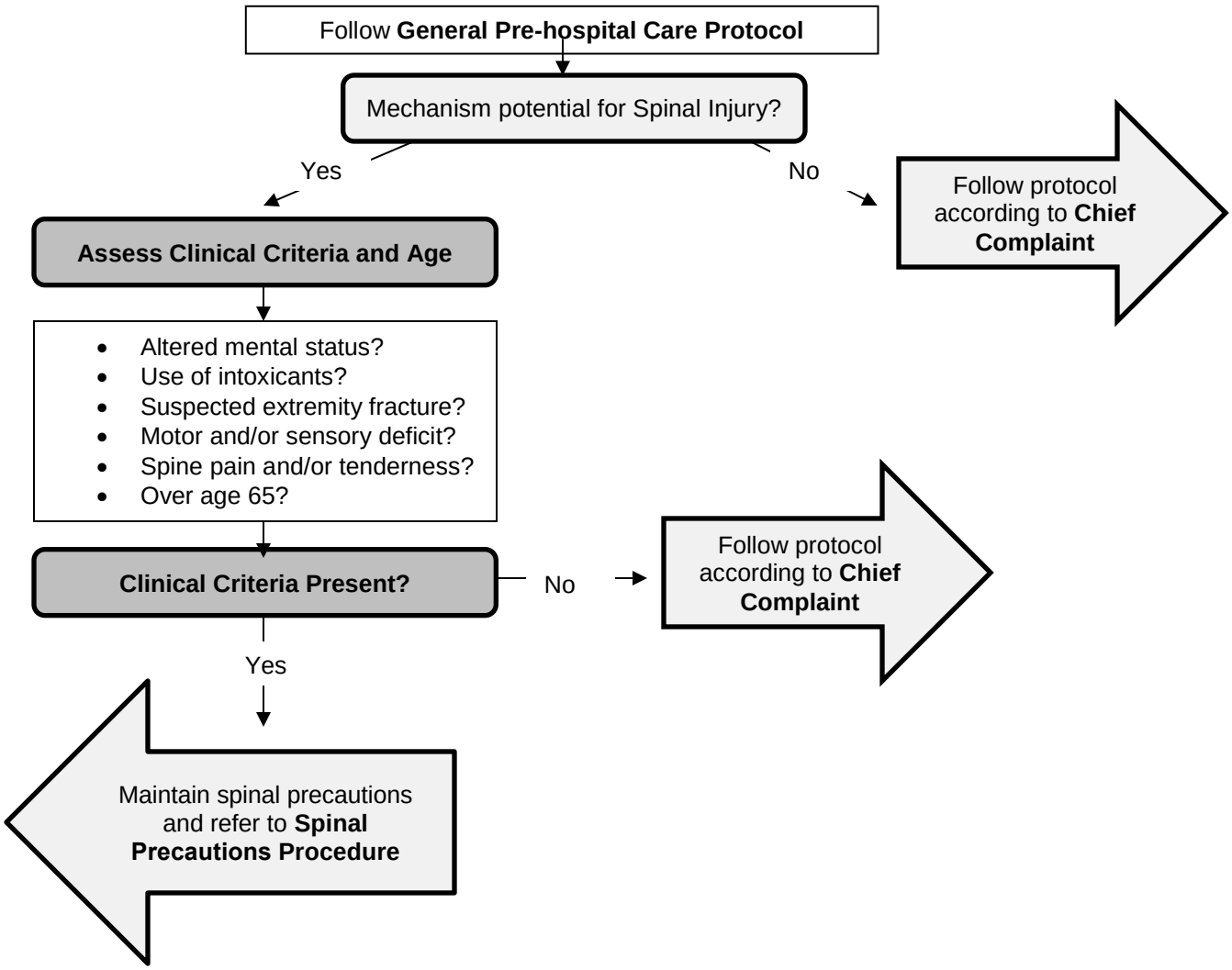
Follow local MCA transport protocol.

Partial/complete amputations
- Control bleeding as above
- Cover wounds with sterile dressings moistened with sterile solution.
- Splint extremity.
- Recoverable amputated parts should be brought to hospital as soon as possible.
- 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.
- Frequent monitoring of circulation, sensation, and motion distal to the injury during transport.

Paramedics, consider sedation per **Patient Sedation Procedure.**

Spinal Injury Assessment

1. Follow **General Pre-hospital Care 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. Suspected extremity fracture
    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.**
7. Patients over the age of 65 with a mechanism of injury with the potential for causing spine injury will have a rigid extrication collar applied even if the spinal injury clinical assessment is negative.


Follow **General Pre-hospital Care Protocol**
Mechanism potential for Spinal Injury?
Yes
No
Follow protocol according to **Chief Complaint**
Assess Clinical Criteria and Age
Altered mental status?
Use of intoxicants?
Suspected extremity fracture?
Motor and/or sensory deficit?
Spine pain and/or tenderness?
Over age 65?
Clinical Criteria Present?
No
Follow protocol according to **Chief Complaint**
Yes
Maintain spinal precautions and refer to **Spinal Precautions Procedure**

Traumatic Arrest

Purpose: To facilitate management of patients in cardiac arrest from a suspected traumatic cause. Successful resuscitation of the traumatic cardiac arrest patient requires rapid identification and correction of specific injuries, (blunt or penetrating) with prompt transport to appropriate facility.

1. Patient that meets DOA criteria, refer to **Dead on Scene Protocol.**
2. If the trauma appears to be minor and a medical condition appears to be the cause of the cardiac arrest, follow the appropriate cardiac arrest protocol.
3. If appropriate, begin high performance CPR, if witnessed arrest or arrest was within a few minutes of EMS arrival.
4. Airway - establish patent airway with 100% oxygen administration.
5. Control bleeding, any extremity injury with significant bleeding should have a tourniquet applied. If tourniquet application is not possible, apply a pressure dressing. For blunt trauma, considerations should be made for a pelvic fracture apply a pelvic binder (commercial or sheet).
6. Prepare for transport per MCA **Trauma Triage Destination Protocol**.
7. Follow **Emergency Airway Procedure**.


8. When indicated, volume administration with 2 large bore IV / IO with normal saline wide open.


9. Chest decompression for relief of tension pneumothorax. Use at least 3” catheter either (12g, 14g, or 16g angiocath).


10. If there is no response to resuscitation efforts, consult with online Medical Control for termination of resuscitation.

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).

Uncertainty exists regarding survival in cold water drowning, however, recent literature suggests the following:

1. In cold water (temperature is less than 43° F (6° C)) and the patient is submerged with evidence of cardiac arrest:
    A. Survival is possible for submersion time less than 90 minutes and resuscitative efforts should be initiated
    B. Survival is not likely for submersion time greater than 90 minutes and providers may consider not initiating resuscitation or termination of resuscitation on scene
2. If warm water (temperature is greater than 43° F (6° C)) and the patient is submerged with evidence of cardiac arrest:
    A. Survival is possible for submersion time less than 30 minutes and resuscitative efforts should be initiated
    B. Survival is not likely for submersion time greater than 30 minutes and providers may consider not initiating resuscitation or termination of resuscitation on scene.
3. It may often 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.

If SCUBA incident with rapid ascent, transport the patient in the left lateral recumbent position.

1. Follow **General Pre-hospital Care Protocol.**
    A. Primary survey should include aggressive airway management and restoration of adequate oxygenation and ventilation.
    B. Exam should include consideration of possible c-spine injury.
    C. Assess for other associated injury such as injury to the head or dive-related emergency.
    D. Assess patient's temperature.

2. **If pulse is absent**:
    A. If pulse is absent, consider submersion time and temperatures as indicated above. Refer to the **Dead on Scene Procedure as indicated.**
    B. In normothermic, (> 34 C or 93F) patients initiate CPR and refer to **Cardiac Arrest – General Protocol (Adult or Pediatric)**.
    C. If patient is hypothermic, (≤ 34C or 93F) go to **Hypothermia Cardiac Arrest Protocol.**

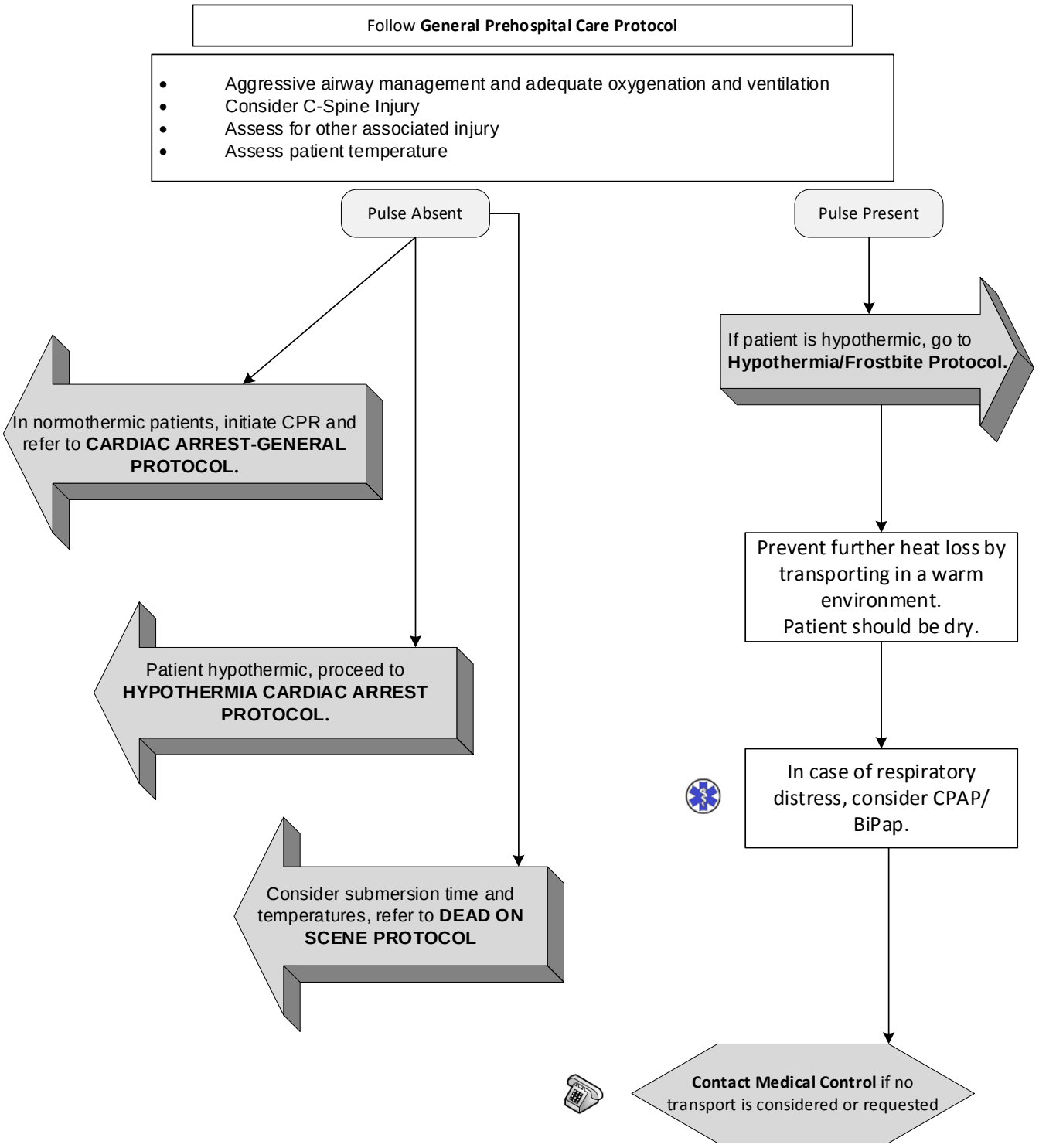
MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

3. **If pulse is present:**
   A. If patient is hypothermic, go to **Hypothermia/Frostbite Protocol**.
   B. Prevent further heat loss by transport in a warm environment.
   C. Patient should be dry.
   D. Patients may develop subacute respiratory difficulty after drowning and therefore all victims of drowning should be transported for observation.

   E. Consider **CPAP/BiPAP** (if available) per **CPAP/BiPAP Procedure.**
   F. Contact Medical Control if no transport is considered or requested.

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

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:



MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

Poisoning/Overdose/Environmental Exposure

GENERAL MANAGEMENT OF TOXIC EXPOSURE (INCLUDING INGESTION)

1. Follow **General Pre-hospital Care Protocol.**
2. Use proper protective equipment and prepare for decontamination if necessary.
3. Remove clothing exposed to chemical (dry decon).
4. Identification of the substance (patient has been exposed to).
5. If altered mental status, refer to **Altered Mental Status Protocol**.
6. If respiratory distress, refer to **Respiratory Distress Protocol.**
7. If the patient is seizing, refer to **Seizure Protocol**.


8. Alert receiving hospital if patient may present HAZMAT risk.
9. 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.


10. Refer to **Pain Management Procedure**

INHALATION EXPOSURES:

1. Ensure high concentration of oxygen is provided.
2. If suspected cyanide gas exposure, refer to **Cyanide Exposure Protocol** and contact medical control immediately.

INGESTION:

1. Use protective eye equipment.
2. If suspected opioid overdose, refer to **Naloxone Administration Procedure.**


3. If cardiac dysrhythmia, refer to appropriate dysrhythmia protocol.

4. For extrapyramidal dystonic reactions, administer Diphenhydramine
    a. For adults, 50 mg IV.
    b. For pediatrics 1 mg/kg IV (max dose 50 mg).


5. For symptomatic tricyclic antidepressant ingestions (tachycardia, wide complex QRS), administer sodium bicarbonate
    a. Adults 50 mEq IV, repeat as needed.
    b. Pediatrics 1mEq/kg IV, repeat as needed.
6. For symptomatic calcium channel blocker overdose, consider Calcium Chloride
    a. Adults 1 gm IV.
    b. Pediatrics 20 mg/kg IV (max dose 1 gm).

EYE CONTAMINATION:

1. Irrigate continuously with Normal Saline or tap water for 15 minutes (attempt to continue enroute) or as directed by Medical Control.
2. For alkali exposure, maintain continuous irrigation.

3. If available, administer Tetracaine, 1-2 drops per eye 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 Normal Saline, 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.
2. Ice for comfort on spider or scorpion bite; DO NOT apply ice to snake bites.

BEES 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 Protocol.**

NERVE AGENT/ORGANOPHOSPHATE EXPOSURE

1. **Evaluate for signs and symptoms of exposure:** Salivation, Lacrimation, Urination, Defecation, Gastrointestinal hypermotility, Emesis, Muscle twitching or spasm (seizures)
    a. ***Minor symptoms only*** – alert, salivation, eye watering, dim vision, drooling, nasal drainage, constricted pupils, abdominal cramps, diaphoresis
    b. ***Moderate symptoms*** – alert, vomiting, muscle twitching, increase in minor symptoms
    c. ***Severe signs & symptoms*** – decline in LOC, urinary incontinence, defecation, severe muscle twitching, seizure, respiratory distress/wheezing
2. Evaluate and maintain the airway, provide oxygenation and support ventilation as needed.
3. NOTE: Anticipate need for extensive suctioning
4. Antidote administration per Mark I Kit/Duo Dote auto-injector Dosing Directive – See Chart

5. Establish vascular access

6. Atropine 2-6 mg IV/IM per Mark I Kit Dosing Directive if Mark I Kit is not available (each Mark I Kit/Duo Dote auto-injector contains 2 mg of atropine)
7. Treat seizures
    a. **Adult**
        i. Administer Midazolam 10 mg IM prior to IV start
        ii. (or) if IV/IO already established, administer Midazolam 5 mg IV/IO
        iii. (or) If available, Valium auto-injector

    b. **Pediatrics**
        i. Administer Midazolam 0.1 mg/kg IM (maximum individual dose 10 mg) prior to IV start
        ii. (or) if IV/IO already established, administer Midazolam 0.05 mg/kg IV/IO (maximum individual dose 5 mg)
        iii. (or) If available, Valium auto-injector
8. Monitor EKG
9. Additional **Atropine** 2 mg IV/IM for continued secretions (0.05 mg/kg for pediatrics)

10. For severe symptoms (if 3 Nerve-agent Antidote kits are administered), administer benzodiazepine as noted for seizures.

*NA Kit Dosing Directive				
	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	1 NA Kit (self-rescue)
ADULT PATIENT	**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 1st dose of available benzodiazepine)
PEDIATRIC	**Pediatric Patient with Non-Severe Signs/Symptoms**	*Mild or moderate symptoms as above*	Positive evidence of nerve agent or OPP on site	Age ≥8 years old: • As Above Age <8 years old • Per Medical Control
	Pediatric Patient with Severe Signs/Symptoms	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Severe breathing difficulty Weakness	Age ≥ 8 years old: • 3 NA Kits Age < 8 years old: • 1 NA Kit Contact Medical Control as needed

***NOTE: Nerve-agent Antidote (NA) =1 Duo Dote or 1 Mark I**

Follow **General Prehospital Care Protocol**

GENERAL MANAGEMENT OF TOXIC EXPOSURE

- Use proper equipment & prepare for decontamination
- Remove clothing exposed to chemical
- Identify substance, if possible
- Alert receiving hospital if patient presents HAZMAT risk
- Sample of substance & any containers should be brought with patient if it does not pose a risk to others

Refer to **Pain Management Procedure** as needed

INGESTION

If altered, refer to **Altered Mental Status Protocol**

If in cardiac dysrhythmia, refer to **appropriate dysrhythmia protocol**

If respiratory distress, refer to **Respiratory Distress Protocol**

If patient is seizing, refer to **Seizures Protocol**

If opioid overdose, refer to **Naloxone Administration Procedure**

INGESTION (CONTINUED)

Contact Medical Control

Administer

If symptomatic tricyclic antidepressant ingestion → **Sodium Bicarbonate 50mEq IV or 1 mEq/kg for pediatrics**

If extrapyramidal dystonic reactions → **Diphenhydramine 50 mg IV or 1 mg/kg for pediatrics**

If symptomatic calcium channel blocker overdose → Consider **calcium chloride 1 gm IV or 20 mg/kg for pediatrics**

INHALATION EXPOSURE

- Dilute noxious gas
- Ensure high concentration of oxygen

If suspected cyanide gas exposure, refer to **Cyanide Exposure Protocol**

EYE CONTAMINATION

- Irrigate continuously with Normal Saline or tap water for 15 minutes
- Attempt to continue during transport
- For alkali exposure, maintain continuous irrigation

If available, administer **Tetracaine, 1-2 drops per eye**, per MCA selection (ensure patient does not rub eye)

Tetracaine Included?

☑ Yes ☐ No

SKIN ABSORPTION

- Brush off dry chemicals
- Irrigate continuously with Normal Saline for 15 minutes or
- As directed by medical control

BITES AND STINGS

Spiders, Snakes, & Scorpions

- Protect rescuers
- Bring in for accurate identification (if contained and/or dead)
- Ice for comfort (spiders or scorpions **ONLY**)

Bees & Wasps

- Remove sting mechanism
- Do not squeeze
- Provide wound care
- Observe for systemic reaction

If systemic reaction, refer to **Anaphylaxis, Allergic Reaction Protocol**

NERVE AGENT/ORGANOPHOSPHATE EXPOSURE

- Evaluate for signs and symptoms
  - Minor Symptoms
  - Moderate Symptoms
  - Severe Symptoms
- Evaluate and maintain the airway, provide oxygenation and support ventilation as needed.
- Anticipate the need for extensive suctioning
- Antidote administration per Mark I Kit/Duo Dote auto-injector Dosing Direction – see chart

Establish vascular access

Atropine 2-6 mg IV/IM per Dosing Directive if Mark I Kit is not available
(Each Mark I kit has 2 mg of Atropine)

Seizures?

Adults
- Administer **Midazolam** 0.1 mg/kg to max 10 mg IM
- If available, **Valium** auto-injector

Pediatrics
- **Midazolam** 0.1 mg/kg IV/IM (maximum individual dose 5 mg)
- If available, **Valium** auto-injector

Monitor EKG

Additional **Atropine** 2 mg IV/IM for continued secretions (0.05 mg/kg for pediatrics)

Heat Emergencies

1. Follow **General Pre-hospital Care Protocol**.
2. Determine history/evidence of heat exposure.
3. Check blood glucose and treat hypoglycemia per **Altered Mental Status Protocol**.

HEAT CRAMPS:

1. Move the patient to a cool environment and attempt oral liquids.
2. Contact medical control.

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. NS IV/IO fluid bolus up to 1 liter, wide open.
    A. Patient may take oral fluid replacement rather than IV if no nausea. 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. Avoid carbonated, alcoholic and caffeinated beverages.
5. Contact medical control.

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. NS IV/IO fluid bolus up to 1 liter, wide open, repeat as indicated.
6. Contact medical control.

MANAGEMENT OF PATIENT WITH EXERTIONAL HEAT STROKE

7. Cool as quickly as possible via ice or cool-water immersion, if possible. Alternative means, such as continually misting the exposed skin with tepid water while fanning the victim, may be used if immersion is not possible.
    A. Cool as much of the body as possible, especially the torso.
8. **Cool first, transport second when possible.**
9. Obtain vascular access; consider resting the patient's arm on the side of immersion tub to start IV while patient is still immersed.
10. If patient experiences seizures, refer to **Seizures Protocol**.
11. Monitor ECG (lead cables can go in the water).
12. If uncontrolled shivering occurs during cooling, consider midazolam per **Patient Sedation Protocol.**

Follow **General Pre-Hospital Care Protocol**

- Determine history/evidence of heat exposure

Refer to **Altered Mental Status Protocol**

HEAT CRAMPS

- Move patient to a cool environment
- Attempt oral liquids

Contact Medical Control

HEAT EXHAUSTION

- Move patient to a cool environment
- Remove tight clothing
- Cool patient without chilling or shivering
- NS IV/IO fluid bolus up to 1 Liter
  - Patient can take fluids by mouth if preferred and no nausea (no alcohol, carbonation, caffeine)

Contact Medical Control

HEAT STROKE

- Move patient to a cool environment
- Remove tight clothing
- Immediately cool patient without chilling or shivering
- Place patient in semi-reclining position with head elevated
- NS IV/IO fluid bolus up to 1 Liter

Contact Medical Control

EXERTIONAL HEAT STROKE

- Cool as quickly as possible via ice or cool-water immersion, if possible
- Alternative means, such as misting the skin with tepid water while fanning may be used if needed
- Cool as much of the body as possible (especially the torso)
- **Cool FIRST, transport second when possible**
- Obtain vascular access
- Monitor ECG

If the patient seizes, refer to **Seizures Protocol**

Contact Medical Control

If uncontrollable shivering occurs, consider **Patient Sedation Protocol**

Hypothermia/Frostbite

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

HYPOTHERMIA:

1. If cardiac arrest develops follow **Hypothermia Cardiac Arrest Protocol**.
2. Move patient to a warm dry place, remove wet clothing & wrap in warm blankets and protect from wind exposure.
3. If the patient's temperature is greater than 30° C (86° F) or patient shivering & conscious:
   A. Apply heat packs to groin, axillae, and neck if possible.
   B. Use warmed humidified oxygen if available.
4. If patient is alert, administer warm non-caffeinated beverages (if available) by mouth, slowly.
5. If patient temperature is less than 30° C (86° F)
   A. Gentle handling is required.
   B. Facilitate transport immediately.
6. If alterations in mental status, consider measuring blood glucose and treat as indicated per **Altered Mental Status Protocol** and assess for other causes of alterations of mentation.

7. Administer warm NS IV/IO fluid bolus up to 1 liter, wide open, if available.
   A. Pediatrics 20 ml/kg

8. Use warmed humidified oxygen if available.

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**.

Follow **General Pre-hospital Care Protocol**

Hypothermia

- Move patient to warm dry place
- Remove wet clothing
- Wrap in warm blankets
- Protect from wind exposure

→ If cardiac arrest develops, follow **Hypothermia Cardiac Arrest Protocol**

Patient temperature is greater than 30° C (86° F)? or
Patient is shivering and conscious?

Yes

- Apply heat packs to groin, axillae and neck if possible
- Use warmed humidified oxygen if available
- Administer warm non-caffeinated beverages (if available) by mouth slowly

No

For altered mental status, follow **Altered Mental Status Protocol**

- Follow local MCA transport protocol
- Use warm humidified oxygen if available
- Administer warm NS IV/IO fluid bolus up to 1 liter, wide open, if available (specialist/paramedic)

Suspected Frostbite

- Remove wet or constricting clothing
- Keep skin dry and protected from wind
- Do not allow limb to thaw if there is a chance that limb may re-freeze or if patient must walk to transportation
- Dress injured areas lightly in cloth to protect from pressure, trauma or friction.
- Do not rub
- Do not break blisters
- Keep patient warm
- Frostbitten areas should be supported and elevated during transport

Paramedics refer to **Pain Management Procedure**

Hypothermia Cardiac Arrest

1. Follow **General Pre-hospital Care Protocol.**
2. Assess body temperature. If temperature is greater than 30° C (86° F), follow **Cardiac Arrest – General or Pediatric Cardiac Arrest – General**
3. Confirm cardiac arrest, begin CPR.
4. Protect against heat loss.
5. Apply heat packs, if available, to axillae, groin, and neck.
6. Administer warmed humidified oxygen, if possible.

7. Administer warmed NS IV/IO, if possible.

8. Follow **Cardiac Arrest – General or Pediatric Cardiac Arrest – General** except:
   A. Limit defibrillation to a single attempt.
   B. Follow medication administration with one administration of indicated medication(s).

9. Initiate transport per **MCA Destination or Transport Protocol**.

Follow **General Pre-hospital Care Protocol**

If temperature is > 30° C (86° F), follow **Cardiac Arrest - General Protocol**

Assess Body Temperature

Confirm Cardiac Arrest, begin CPR

- Protect against heat loss
- Apply heat packs, if available, to axillae, groin and neck
- Administer warmed humidified oxygen, if possible

- Administer warmed NS IV/IO, if possible

Follow **Cardiac Arrest – General Protocol, EXCEPT:**

- Limit defibrillation to a single attempt
- Follow medication administration with one administration of indicated medication(s)

Initiate transport per **MCA Destination or Transport Protocol**

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Adult Treatment Protocols

Table of Contents

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 due to hypoglycemia, opioid overdose or unknown etiology.

1. Follow **General Pre-hospital Care Protocol**.
2. **If patient is not alert or vital signs are unstable:**
   a. Evaluate and maintain airway, provide oxygenation and support ventilations as needed per **Emergency Airway Procedure**.
   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 **Naloxone Administration Procedure**.
4. Restrain patient if necessary, refer to **Patient Restraint Procedure**.
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.
   a. If less than 60 mg/dL, administer oral glucose.

MCA Approval of Blood Glucose Testing by specific MFR Agencies
(Provide participating agency list to BETP)

☑ YES ☐ NO

7. If glucose is less than 60 mg/dL, and patient is demonstrating signs of hypoglycemia:
   a. Administer IV Dextrose 25 gm.
   b. Per MCA selection, if unable to start IV, when IV Dextrose is indicated, administer Glucagon.

Glucagon 1mg IM

☑ Included

☐ Not Included

8. Recheck the blood glucose 10 minutes after glucose/Glucagon administration (Per MCA selection).

9. Contact medical control.

Follow **General Prehospital Care Protocol**

Restrain patient, if necessary. Refer to **Patient Restraint Procedure**

Evaluate and maintain airway, provide oxygenation, and support ventilations as needed per **Emergency Airway Procedure**.

If respiratory depression/suspected opioid overdose, refer to **Naloxone Administration Procedure**

If no suspected trauma, place patient in the recovery position

MCA Approval of Blood Glucose Testing by Specific MFR Agencies
Provide Agency List to BETP

☑ Yes ☐ No

Signs of Hypoglycemia?

Check Blood Glucose

Glucose < 60 mg/DL?

Known Diabetic?

Administer Oral Glucose

Establish Vascular Access

Glucose < 60 mg/DL?

Administer Dextrose 25 g IV

No Access?

Glucagon 1 mg IM
☑ Included ☐ Not Included

Administer Glucagon 1 mg IM

Recheck Blood Glucose 10 minutes after administration

Contact Medical Control

Stroke or Suspected Stroke

1. Follow **General Pre-hospital Care Protocol.**
2. Utilize the Cincinnati Pre-hospital Stroke Scale (CPSS). Try to elicit the following signs:
   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. Abnormal speech (have patient say "the sky is blue in Michigan")

Any deficit in the CPSS is considered positive for stroke.

3. If the patient is demonstrating signs of hypoglycemia, measure blood glucose level.
   a. If less than 60 mg/dL, administer oral glucose.

MCA Approval of Blood Glucose Testing by specific MFR Agencies
(Provide participating agency list to BETP)

☑ YES ☐ NO

   b. Treat per **Altered Mental Status Protocol**.
4. If seizure, follow **Seizures Protocol.**
5. Document time last seen normal for patient, if known.
6. Minimize scene time, notify destination hospital as soon as possible and begin transport.

7. Initiate vascular access. (**DO NOT** delay scene time for IV.)

8. Monitor ECG. (**DO NOT** delay scene time for ECG monitoring.)

Follow **General Prehospital Care Protocol**

Utilize the Cincinnati Pre-hospital Stroke Scale. Try to elicit the following signs:

- **Face** – facial droop present (have patient show teeth or smile)
- **Arm** – arm drift present (have patient close eyes and hold arms straight out for 10 seconds)
- **Abnormal Speech** – (have the patient say "The sky is blue in Michigan."

MCA Approval of Blood Glucose Testing by Specific MFR Agencies
Provide Agency List to BETP

☑ Yes ☐ No

Obtain blood glucose measurement

If the patient seizes, go to **Seizures Protocol**

If blood glucose is <60 mg/dL, treat per **Altered Mental Status Protocol - Adult**

- Document time last seen normal for patient, if known.
- Minimize scene time, notify destination hospital as soon as possible and begin transport.

Initiate Vascular Access
(Do not delay scene time)

Monitor ECG
(Do not delay scene time)

Respiratory Distress

1. Follow **General Pre-hospital Care Protocol.**
2. Allow patient a position of comfort.
3. **Determine the type of respiratory problem involved:**

CLEAR BREATH SOUNDS:

1. Possible metabolic problems, MI, pulmonary embolus, hyperventilation
2. Obtain 12-lead ECG.

ASYMMETRICAL BREATH SOUNDS:

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

STRIDOR/UPPER AIRWAY OBSTRUCTION:

1. Complete Obstruction:
   A. Follow **Emergency Airway Procedure**.
2. Partial Obstruction: epiglottitis, foreign body, anaphylaxis:
   A. Follow **Emergency Airway Procedure**.
   B. Consider anaphylaxis (see **Anaphylaxis/Allergic Reaction Protocol**).
   C. Transport in position of comfort.

RHONCHI (SUSPECTED PNEUMONIA):

1. Sit patient upright.
2. Consider CPAP per MCA selection. Refer to **CPAP/BiPAP Procedure**.
3. Consider NS IV/IO fluid bolus up to 1 liter, wide open if tachycardia, repeat as needed.

CRACKLES (CHF/PULMONARY EDEMA):

1. Refer to the **Pulmonary Edema/CHF** protocol in the adult cardiac protocols.

WHEEZING, DIMINISHED BREATH SOUNDS (ASTHMA, COPD):

1. Assist the patient in using their own Albuterol Inhaler, if available
2. Administer Albuterol if available. Refer to **Nebulized Bronchodilators Procedure**.
3. Consider CPAP per MCA selection. Refer to **CPAP/BiPAP Procedure**.
4. Administer Epinephrine auto-injector (0.3 mg) in patients with impending respiratory failure unable to tolerate nebulizer therapy.
5. Administer Bronchodilator per **Nebulized Bronchodilators Procedure**.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

6. Administer Epinephrine 1 mg/ml, 0.3 mg (0.3 ml) IM in patients with impending respiratory failure unable to tolerate nebulizer therapy.
7. Per MCA Selection, if a second nebulized treatment is needed, administer Prednisone **OR** Methylprednisolone.

Medication Options:

Prednisone
50 mg tablet PO

☐ YES ☑ NO

Methylprednisolone
125 mg IV

☑ YES ☐ NO

8. For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and reserved for when a patient can't take a PO medication.
9. Consider CPAP/BiPAP (if available) per **CPAP/BiPAP Procedure**.

Asthma:

10. Consider repeat Epinephrine 1mg/ml, 0.3 mg (0.3 ml) IM in patients with impending respiratory failure unable to tolerate nebulizer therapy.
11. Consider Magnesium Sulfate 2gms slowly 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.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

Follow **General Pre-hospital Care Protocol**

- Allow patient position of comfort
- Determine type of respiratory problem

Nature of Airway Sounds?

Clear

Possible
- Metabolic Problems
- Myocardial Infarction
- Pulmonary Embolus
- Hyperventilation

Obtain 12 Lead ECG

Stridor

Complete or Partial Obstruction?
Follow **Emergency Airway Procedure**

Consider Anaphylaxis, refer to **Anaphylaxis/Allergic Reaction Protocol**

Rhonchi (Pneumonia)

- Sit Patient Upright
- Consider Fluid Bolus

Refer to **CPAP/BiPAP Procedure**

Crackles (CHF/Pulmonary Edema)

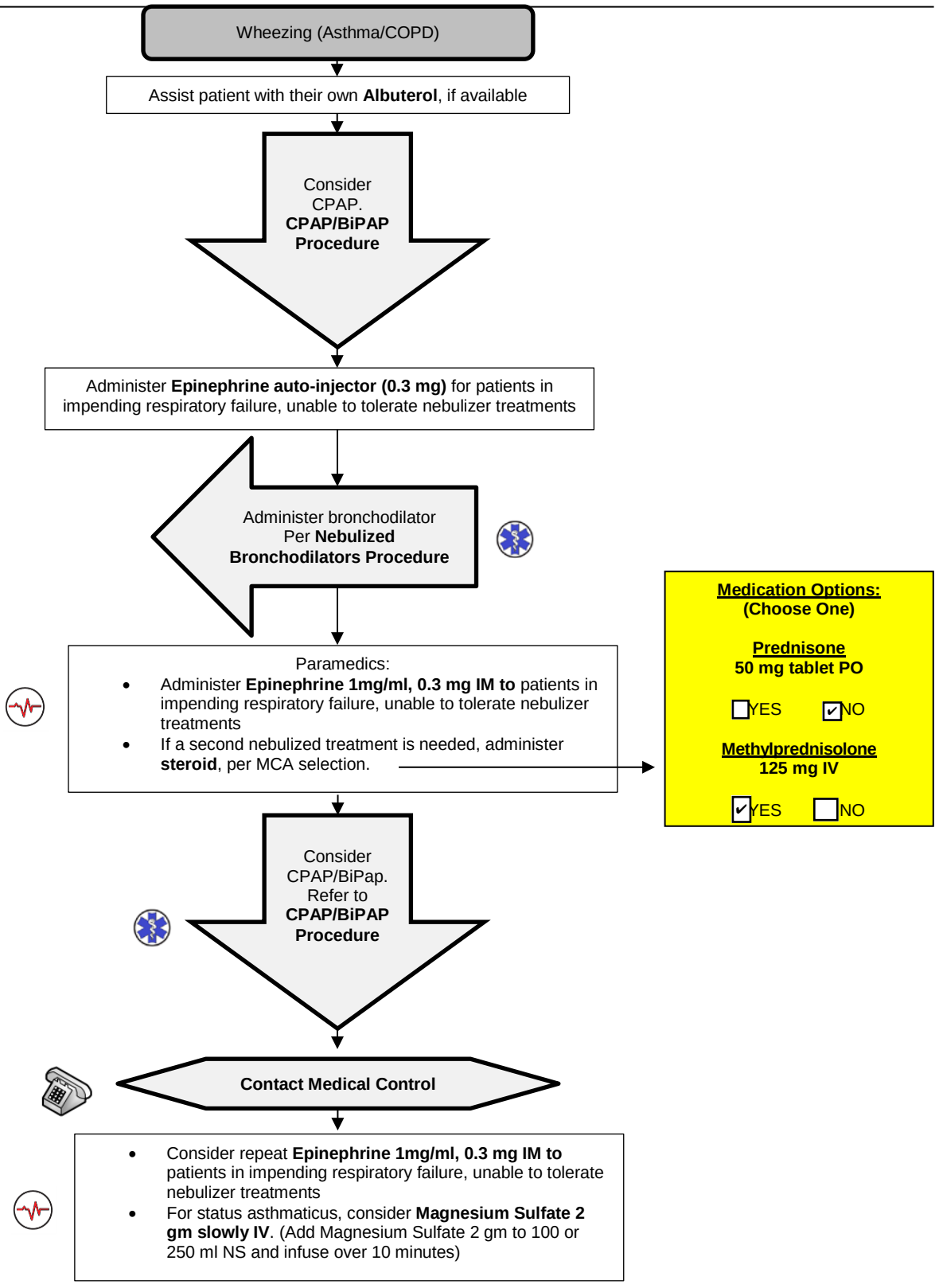
Consider Anaphylaxis, refer to **CHF/Pulmonary Edema**

Asymmetric

If evidence of tension pneumothorax and patient unstable refer to **Pleural Decompression Procedure**

Wheezing (Asthma/COPD), See Page 2

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:



MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

Seizures

1. Follow **General Pre-hospital Care Protocol**.
2. **IF PATIENT IS ACTIVELY SEIZING:**
   A. Protect patient from injury.
   B. Do not force anything between teeth.

   C. Administer Midazolam 10 mg IM prior to IV start.

   D. If blood glucose is found to be less than 60 mg/dL or hypoglycemia is suspected:
      a. Administer Dextrose 25 gm IV.
      b. If no IV access, per MCA selection, administer glucagon 1 mg IM

Glucagon included?

☑ Yes ☐ No

   E. If patient is pregnant (eclampsia)
      a. Administer Magnesium Sulfate 2 gm over 10 minutes IV/IO until seizure stops**.** Administration of Magnesium Sulfate is best accomplished by adding Magnesium Sulfate 2gm 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.

   F. If IV already established and Midazolam IM has not been administered, administer
      a. Midazolam 5 mg IV/IO **OR**
      b. Lorazepam 2 mg slow IV push until seizure stops, per MCA selection.

Medication Options:
(Choose One)
☑ Midazolam 5 mg IV/IO
OR
☐ Lorazepam 2 mg IV/IO

   G. If seizures persist
      a. Per MCA selection, repeat Midazolam 5mg IV/IO/IM **OR**
      b. Lorazepam 2 mg slow IV push until seizure stops
      c. Contact medical control

3. **IF PATIENT IS NOT ACTIVELY SEIZING** and has/is:
   A. Altered level of consciousness, refer to **ALTERED MENTAL STATUS PROTOCOL.**
   B. Alert
      a. Monitor for changes
      b. Obtain vascular access.

Follow **General Pre-Hospital Protocol**

Is the patient **actively seizing**?

Seizing

- Protect patient from injury.
- Do not force anything between teeth
- Assess glucose, if possible (Do not Delay Midazolam)

Not Seizing

Alert

- Monitor for changes
- Establish vascular access (S)

Not Alert

Refer to **Altered Mental Status Protocol**

Hypoglycemic

Administer:
Dextrose 25 gm IV
If no IV, administer
Glucagon 1 mg IM,
Per MCA selection

Still Seizing?

And Hypoglycemic?

Contact Medical Control

Administer additional:
Dextrose 25 gm IV

Glucagon included?

☑ Yes ☐ No

Pregnant

Administer:
Magnesium Sulfate 2 gm over 10 minutes IV/IO
(Add 2 gm Magnesium Sulfate to 100 or 250 ml NS and infuse over 10 min)

Still Seizing?

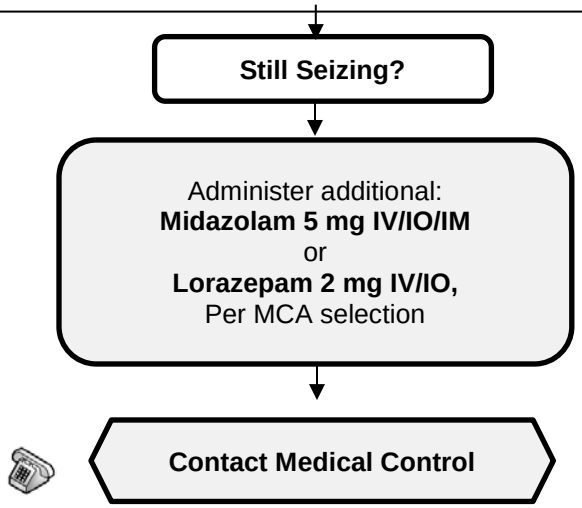
Prior to IV Start, Administer
Midazolam 10 mg IM

If IV already established and Midazolam IM has not been administered

Administer:
Midazolam 5 mg IV/IO
or
Lorazepam 2 mg IV/IO,
Per MCA selection

Still Seizing?

Medication Options:
(Choose One)
☑ Midazolam 5 mg IV/IO
OR
☐ Lorazepam 2 mg IV/IO


Still Seizing?
Administer additional:
Midazolam 5 mg IV/IO/IM
or
Lorazepam 2 mg IV/IO,
Per MCA selection
Contact Medical Control

Sepsis

It is the purpose of this policy 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 and above with a clinical suspicion of systemic infection who have 2 or more of the inclusion criteria. These patients are defined as meeting criteria for suspicion of sepsis and should be evaluated and treated per this protocol.

INCLUSION CRITERIA

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

Treatment

1. Follow **General Pre-Hospital Care** protocol.
2. Place patient in supine position.
3. Start large bore IV catheter.
4. Start second large bore IV catheter, if time permits.
5. Place on cardiac monitor and treat rhythm according to appropriate protocol.
6. Place on continuous pulse oximetry.
7. Measure blood glucose.
8. If the patient meets inclusion criteria, administer a NS IV/IO fluid bolus up to 1 liter, wide open. Reassess the patient, repeat boluses to a maximum of 2 L NS as long as vital sign abnormalities persist.
9. If hypotension persists, refer to **Shock Protocol**.
10. **(Optional)** Measure ETCO2 level. If CO2 < 25, report level to the receiving facility as soon as possible.

Follow **General Prehospital Care Protocol**

Clinical suspicion of systemic infection and two or more of the following:

- **Hyperthermia temp > 38 ° C (100.4° F)**
- Hypothermia temp < 36° C (96.8° F)
- Heart rate >90bpm
- Respiratory rate <10 or >20 per minute
- SBP <90 mmHg or evidence of hypoperfusion

Start Large Bore IV Catheter (Second if time permits)

Monitor ECG (treat accordingly)

- Continuous pulse oximetry
- Measure blood glucose

f inclusion criteria is met, administer NS bolus, up to 1 liter wide open. Repeat one time if vital sign abnormalities persist.

If hypotension persists, refer to **Shock Protocol.**

Measure ETCO2, if available. If CO2 <25, report level to the receiving facility ASAP.

Excited Delirium

Indications: Patient who is an imminent physical threat to personnel and/or themselves.

Treatment

1. Ensure ALS response
2. Follow **General Pre-hospital Care Protocol**
3. Coordinate with on scene law enforcement before any physical patient contact. Refer to **Patient Restraint Procedure.**
4. Obtain history when possible and perform a visual patient assessment looking for symptoms of ExDS. If an alternate cause of the behavior is likely, transition to the **Altered Mental Status Protocol**.

5. If the patient remains combative, following restraint by law enforcement:
   a. Per MCA selection, administer
   Midazolam 10 mg IM or 5 mg IN **OR** **Ketamine 4 mg/kg IM**.

MCA Selection
(Choose One)

☐ Midazolam 10 mg IM or 5 mg IN
OR
☑ Ketamine 4 mg/kg IM

6. Obtain temperature
   b. If hyperthermic, provide cooling – ice packs to neck, axilla and groin; fluids to skin
7. Provide fluid bolus of up to 2 L of NS
8. Restrain patient per the **Patient Restraint Procedure** in anticipation of the sedation wearing off.
9. Evaluate for other causes of Altered Mental Status including: **A**lcohol, **E**pilepsy/Seizure, **I**nsulin, **O**verdose, **U**remia/Under dose, **C**ardiac, **H**ypoxia, **E**nvironment, **S**troke, **S**epsis, **T**rauma, **I**ngestion, **P**sych, **P**henothiazines, **S**alicylates
10. Monitor EKG, consider 12-lead if any evidence of hyperkalemia (peaked T waves, prolonged PR, widened QRS)
11. Monitor capnography, if possible

12. Additional sedation as needed, per **Patient Sedation Procedure.**

Assure the Scene is SECURE

Follow **General Pre-hospital Care Protocol**

- Coordinate with **Law Enforcement** on scene before any physical patient contact
- Obtain history when possible
- Perform visual patient assessment looking for symptoms of Excited Delirium

Refer to **Patient Restraint Procedure**

If Alternate cause is likely, refer to **Altered Mental Status Protocol**

Have **Law Enforcement** restrain patient

Per MCA Selection Administer **Ketamine (4 mg/kg IM) OR Midazolam 10 mg IM or 5 mg IN**

MCA Selection (Choose One)

☐ Midazolam 10 mg IM or 5 mg IN
OR
☑ Ketamine 4 mg/kg IM

- If hyperthermic, provide cooling – ice packs to neck, axilla and groin; fluids to skin
- Provide fluid bolus of up to 2 L of NS
- Evaluate for other causes of Altered Mental Status including: **A**lcohol, **E**pilepsy/Seizure, **I**nsulin, **O**verdose, **U**remia/Under dose, **C**ardiac, **H**ypoxia, **E**nvironment, **S**troke, **S**epsis, **T**rauma, **I**ngestion, **P**sych, **P**henothiazines, **S**alicylates
- Monitor EKG, consider 12-lead if any evidence of hyperkalemia (peaked T waves, prolonged PR, widened QRS)

Additional sedation as needed, per **Patient Sedation Procedure**

Excited Delirium - Addendum

The WMRMCC will adopt the state Excited Delirium protocol with the following change:

The maximum single dose of ketamine shall not exceed 500mg.

MUSKEGON COUNTY

Protocols

Protocol Number | **Protocol Name**

Obstetrics and Pediatrics

Table of Contents

Pediatric Medication Emergency Dosing and Intervention Cards

Purpose: Instructions for using the **Michigan Medication Emergency Dosing and Intervention Cards** (MI-MEDIC). Protocols are dynamic and may change based on current science. EMS personnel must be familiar with the most current set of approved protocols which take precedence over the information included in the MI-MEDIC.

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.

Obstetrical Emergencies

Purpose: To provide the process for the assessment and management of the patient with an obstetrical related emergency.

1. Follow **General Pre-hospital Care Protocol**
2. Assessment Information
    A. History:
        a. Past Medical History: previous births, previous complications
        b. Current History: duration of gestation (weeks), whether single or multiple births are expected.
    B. Specific Objective Findings: vital signs, assess contractions
    C. 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
    D. Obtain vascular access, if time permits.

3. Management of Normal Delivery
    A. Have oxygen and suction readily available for care of the newborn.
    B. **If signs of newborn delivery are imminent, and there is no time to transport, prepare for delivery.**
        a. Try to find a place for maximum privacy and cleanliness.
        b. Position patient on back, on stretcher if time permits or on bed.
            i. Monitor patient for signs of hypotension. If signs develop, position patient so weight of uterus is to patient's left side.
        c. Drape if possible, using clean sheets.
        d. Encourage mother to relax and take slow deep breaths through her mouth.
        e. Reassure her throughout procedure.
        f. As baby's head begins to emerge from vagina, support it gently with hand and towel to provide a controlled delivery.
        g. After head is delivered look and feel to see if cord is wrapped around baby's neck.
            i. **If the cord is around neck and loose**, slide gently – over the head **DO NOT TUG.**
            ii. **If the cord is around neck and snug**, clamp the cord with 2 clamps and cut between the clamps.
        h. As the shoulders deliver, carefully hold and support the head and shoulders as the body delivers, usually very suddenly – and the baby is very slippery! **Note the time of delivery**.
        i. Place the baby on its side with head lower than the body. (Suction with a bulb syringe should be reserved for infants with obvious obstruction)

j. Prevent heat loss.
   i. Place baby in warm environment
   ii. Dry baby off and remove all wet linen.
k. Evaluate respirations
   i. **If the baby does not breathe spontaneously**, stimulate by gently rubbing its back or slapping the soles of its feet. If still no response, initiate ventilation with 100% high flow oxygen per **Pediatric Newborn Assessment, Treatment and Resuscitation Protocol.**
   ii. If spontaneous breathing begins, administer oxygen for a few minutes until baby's color is pink.
l. When infant is delivered and breathing normally, cord should be tied or clamped 8 inches from the infant with 2 clamps (ties) placed 2 inches apart. Cut the cord between the clamps, and assure that no bleeding occurs.
   i. If child is being resuscitated or is in distress, the cord may be cut and clamped and kept moist with a small dressing. (In case Umbilical Vein IV is needed.)
m. Score **APGAR** 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

n. If **APGAR** is less than 6, refer to **Pediatric Newborn Assessment, Treatment and Resuscitation Protocol**.
o. When delivery of baby is complete, prepare for immediate transport. Placenta can be delivered in route or at the hospital
p. Delivery of placenta generally takes place within 20 minutes.
q. Following placental delivery, massage the uterus to aid in contraction of the uterus.
r. Place placenta in basin or plastic bag and transport with mother.


s. Contact medical control.

4. If there are signs of airway obstruction or respiratory distress, suction and refer to **Pediatric Newborn Assessment, Treatment and Resuscitation Protocol.**
5. Abnormal Deliveries
   A. Contact Medical Control as soon as appropriate.
   B. **Breech position**
      a. Allow buttocks and trunk to deliver spontaneously.
      b. Once legs are clear, support body on the palm of your hand and surface of your arm, allowing head to deliver.
      c. If the head doesn't deliver immediately, transport rapidly to the hospital with mother's buttocks elevated on pillows with baby's airway maintained throughout transfer.
         i. Place **gloved** hand in the vagina with your palm towards the baby's face. Form a "V" with your fingers on either side of the baby's nose and push the vaginal wall away from baby's face until the head is delivered.
   C. **Prolapsed Cord – Life Threatening Condition**
      a. Place mother in a supine position with hips supported on a pillow.
      b. Evaluate and maintain airway, provide oxygen.

c. **With sterile gloved hand, gently push** the baby up the vagina several inches to release pressure on the cord.
d. **DO NOT ATTEMPT TO PUSH CORD BACK!**
e. Transport maintaining pressure on baby's head.

D. **Arm or limb presentation – Life threatening condition**.
a. Immediate transportation
b. Delivery should not be attempted outside the hospital.
c. Place mother in position of comfort or with hips elevated on pillow.
d. Evaluate and maintain airway, provide oxygen.

E. **Multiple births**
a. Immediate transportation
b. Multiple birth infants are typically small birth weight and will need careful management to maintain body heat.
c. After first infant is delivered, clamp cord and proceed through airway, drying and warming procedures while awaiting delivery of other births, (See step 3a.)
d. Prepare additional supplies for subsequent births.
e. There may be time to transport between births.

6. **Pre-eclampsia/Eclampsia**

A. Signs of preeclampsia
a. BP 160/110 or higher
b. Marked peripheral edema
c. Diminished level of consciousness
d. Seizure (eclampsia)

B. Immediate transport

C. If seizure occurs
a. Administer Magnesium Sulfate 2 gm over 10 minutes IV/IO until seizure stops**.** Administration of Magnesium Sulfate is best accomplished by adding Magnesium Sulfate 2gm to 100 or 250 ml of NS and infusing over approximately 10 minutes.
b. If eclamptic seizure does not stop after magnesium, then refer to **Seizure Protocol**

Follow **General Pre-Hospital Care Protocol**

- Assess history (previous births, complications, gestation, etc)
- Objective findings (vitals, contractions)
- Determine whether to transport or remain on scene.

Specialist/Paramedic: Obtain Vascular Access, if time permits

Seizure?

- Administer Magnesium Sulfate 2 gm over 10 minutes IV/IO until seizure stops**.** Administration of Magnesium Sulfate is best accomplished by adding Magnesium Sulfate 2gm to 100 or 250 ml of NS and infusing over approximately 10 minutes.
- If eclamptic seizure does not stop after magnesium, then refer to **Seizure Protocol**

Delivery Imminent?

Yes

Presentation?

No

Transport, refer to **appropriate protocol**

Normal

- Prepare for delivery
- Try to find private, clean place
- Position patient on back
- Drape if possible
- Reassure

- Support the head as it emerges
- If cord is wrapped around the neck
  - Slide over if loose
  - Clamp and cut if tight
- Support the body through delivery
- Note time of delivery
- Suction with bulb syringe should be reserved for infants with obvious signs of airway obstruction

Breech

Contact Medical Control ASAP

- Allow buttocks and trunk to deliver spontaneously
- Once legs clear, support body, allowing head to deliver
- If head doesn't deliver immediately, transport rapidly with mother's hips elevated and baby's airway maintained
- Place a gloved hand in the vagina with your palm towards the baby's face. Form a "V" with your fingers on either side of the baby's nose and push the vaginal wall away until the head is delivered

Cord

Contact Medical Control ASAP

LIFE THREATENING CONDITION

- Place mother supine, with hips supported.
- Evaluate and maintain airway.
- **With sterile gloved hand**, gently push the baby up the vagina several inches to release pressure on the cord.
- **DO NOT PUSH CORD BACK**
- Transport maintaining pressure on the baby's head.

Limb

LIFE THREATENING CONDITION

- Immediate transportation
- Do not attempt delivery out of hospital
- Place mother in position of comfort, or hips elevated
- Evaluate and maintain airway, provide oxygen.

- Evaluate Infant Respirations
  - If not breathing, stimulate the infant
  - If breathing, administer oxygen until color is pink
- Clamp and cut the cord
- Score **APGAR** at one and five minutes after delivery

Neonatal Assessment and Resuscitation

Aliases: newborn treatment, newborn resuscitation

This protocol should be followed for all 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. Exam
    a. Respiratory rate and effort (strong, weak, or absent; regular or irregular)
    b. Signs of respiratory distress (grunting, nasal flaring, retractions, gasping, apnea)
    c. Heart rate (fast, slow, or absent), auscultation of chest is the preferred method
    d. Muscle tone (poor or strong)
    e. Color/Appearance (central cyanosis, peripheral cyanosis, pallor, normal)
    f. APGAR score

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

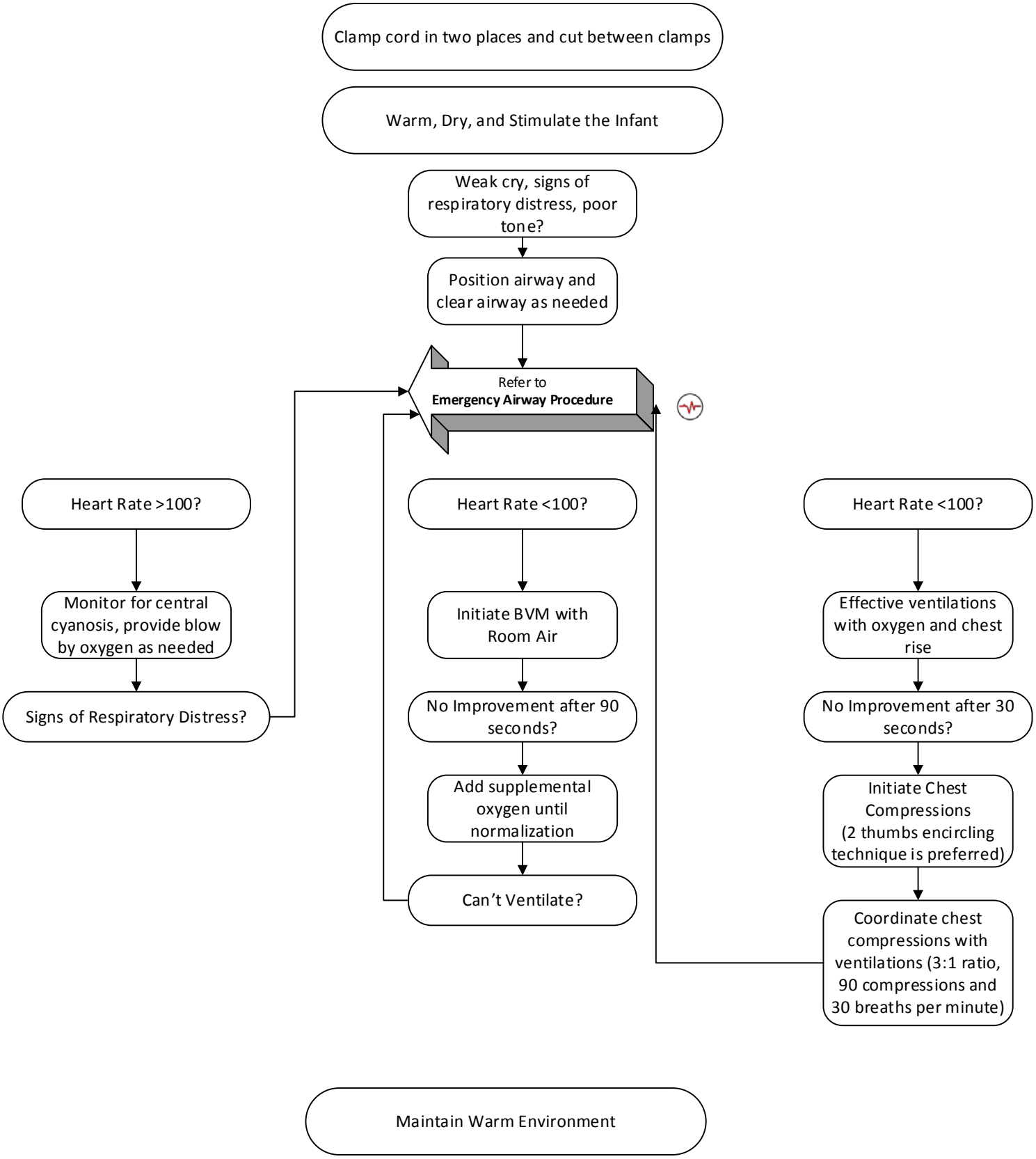
    g. Estimated gestational age (term, late preterm, premature)
    h. Pulse oximetry should be considered if prolonged resuscitative efforts or if supplemental oxygen is administered (goal 85-95% at 10 minutes)
3. Procedure
    a. Clamp cord in two places and cut cord between clamps
        i. Should be two to three minutes post delivery
        ii. One clamp 8” from the infant’s abdominal wall and second 2” further
    b. Warm, dry, and stimulate
        i. Wrap infant in dry towel or blanket to keep infant warm, keep head covered if possible
        ii. If strong cry, regular respiratory effort, good tone, and term gestation, infant should be placed skin-to-skin with mother and covered with dry linen

c. If weak cry, signs of respiratory distress, poor tone, or preterm gestation then position airway (sniffing position) and clear airway as needed
    i. If thick meconium or secretions present **and** signs of respiratory distress, then suction mouth then nose
d. If heart rate >100 beats per minute
    i. Monitor for central cyanosis, provide blow-by oxygen as needed
    ii. 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
        2. If unable to ventilate, consider intubation per **Emergency Airway Procedure**

e. If heart rate < 100 beats per minute
    i. Initiate bag-valve-mask ventilation with room air at 40-60 breaths per minute
        1. Primary indicator of improvement is increased heart rate
        2. Only use minimum necessary volume to achieve chest rise
    ii. If no improvement after 90 seconds, provide ventilations with supplemental oxygen (100%) until heart rate normalizes (100 or above)
        1. If unable to ventilate, consider intubation per **Emergency Airway Procedure**

f. If heart rate < 60 beats per minute
    i. Ensure effective ventilations with supplementary oxygen and adequate chest rise
    ii. If no improvements after 30 seconds, initiate chest compressions
        1. Two-thumb-encircling-hands technique is preferred
    iii. Coordinate chest compressions with positive pressure ventilation (3:1 ratio, 90 compressions and 30 breaths per minute)
        1. Per MCA selection, consider intubation per **Emergency Airway Procedure**

4. Maintain warm environment
    a. Dry off infant and discard wet linen
    b. Swaddle infant to mother skin to skin if infant is stable
    c. Use extreme caution if chemical heat packs are used
5. For patient transport, refer to **Safe Transportation of Children in Ambulances Protocol**.


Clamp cord in two places and cut between clamps
Warm, Dry, and Stimulate the Infant
Weak cry, signs of respiratory distress, poor tone?
Position airway and clear airway as needed
Refer to
Emergency Airway Procedure
Heart Rate >100?
Monitor for central cyanosis, provide blow by oxygen as needed
Signs of Respiratory Distress?
Heart Rate <100?
Initiate BVM with Room Air
No Improvement after 90 seconds?
Add supplemental oxygen until normalization
Can't Ventilate?
Heart Rate <100?
Effective ventilations with oxygen and chest rise
No Improvement after 30 seconds?
Initiate Chest Compressions (2 thumbs encircling technique is preferred)
Coordinate chest compressions with ventilations (3:1 ratio, 90 compressions and 30 breaths per minute)
Maintain Warm Environment

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.

1. Follow **Patient Assessment Protocol**.
2. Restrain patient if necessary, refer to **Patient Restraint Procedure**.
3. For a known diabetic, consider small amounts of oral glucose paste, buccal or sublingual.
4. If the patient is **alert** but demonstrating altered mental status, measure blood glucose level (per MCA selection).

MCA Approval of Blood Glucose Testing by specific MFR Agencies
(Provide participating agency list to BETP)

☑ YES ☐ NO

5. If less than 40 mg/dL for patients less than 1 year or 60 mg/dL for patients 1 year and above, administer small amounts of oral glucose paste, buccal or sublingual.
6. If glucose is less than 40 mg/dL for patients less than 1 year or 60 mg/dL for patients 1 year and above, administer Dextrose according to MI-MEDIC cards.
7. If MI-MEDIC unavailable, administer Dextrose 0.5 g/kg
   A. For patients up to 2 months of age, utilize Dextrose 12.5%
   B. For patients between 2 months and 6 years of age, utilize Dextrose 25%
   C. For patients age 7 or greater, utilize Dextrose 50%
   D. May utilize 10% for all ages 5 ml/kg (0.5 gm/kg) up to 250 ml, according to **Dextrose Protocol**.
8. Per MCA selection, if unable to start IV, administer Glucagon according to MI-MEDIC cards.

Glucagon Included?
☑ Yes ☐ No

9. If MI-MEDIC unavailable
   A. For patients up to 4 years of age, administer Glucagon 0.5 mg IM
   B. For patients aged 5 or greater, administer Glucagon 1 mg IM
10. If respiratory depression is present, administer Naloxone according to MI-MEDIC cards. If MI-MEDIC is unavailable, administer Naloxone 0.1 mg/kg IV/IO/IN/IM.
11. Repeat Dextrose as indicated.
12. Repeat Naloxone as indicated.

NOTE:

1. 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 amp; administer as indicated above.
2. To obtain **Dextrose 25%,** discard 25 ml out of one amp of D50, then draw 25 ml of NS into the D50 amp; administer as indicated above.
3. 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).

Pediatric Respiratory Distress, Failure or Arrest

1. Follow **Patient Assessment Protocol.**
2. Assess the patient's airway; if the airway is obstructed, refer to **Emergency Airway Procedure**
   A. Consider possibility of partial airway obstruction presents with acute respiratory distress of sudden onset accompanied by fever, drooling, hoarseness, stridor, and tripod positioning.
   B. If unable to ventilate patient after airway repositioning, assume airway obstruction.
3. Allow the patient a position of comfort
4. Titrate oxygen saturation to 94% (Having a parent assist with blow by may be necessary)
5. Airway should be managed by least invasive method possible.
6. Suction as needed if excessive secretions are present.
7. Consider CPAP if available, per **CPAP/BiPAP Procedure**.
8. Do not delay transport for interventions.

9. Attempt vascular access only if necessary for patient treatment.

Suspected Bronchospasm (Wheezing):

1. Assist the patient in using their own Albuterol Inhaler, if available

2. Administer inhaled medications according to **Nebulized Bronchodilators Procedure**.
3. Consider CPAP, if available, per **CPAP/BiPAP Procedure.**
4. In cases of respiratory failure:
   A. If child appears to weigh less than 10 kg (approx. 20 lbs.), contact medical control prior to Epinephrine if possible.
   B. If child weighs between 10-30 kg (approx. 60 lbs.); administer Pediatric Epinephrine Auto-Injector.
   C. Child weighing greater than 30 kg; administer Epinephrine Auto-Injector.
5. Per MCA selection, if a second nebulized treatment is needed also administer Prednisone **OR** Methylprednisolone.

Medication Options:

Prednisone
50 mg tablet PO
(Children 6 and above, if tolerated)

☐ YES ☑ NO

Methylprednisolone
2 mg/kg IV/IO
(Maximum dose 125 mg)

☑ YES ☐ NO

6. For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and reserved for when a patient can't take a PO medication.
7. If patient is in respiratory failure:
   A. If child appears to weigh less than 10 kg (approx. 20 lbs.), contact medical control prior to Epinephrine if possible.
   B. If child weighs between 10- 30 kg (approx. 60 lbs.); administer Epinephrine 1:1000, 0.15 mg (0.15 ml) IM OR via Pediatric Epinephrine Auto-injector, if available.
   C. Child weighing greater than 30 kg; administer Epinephrine 1mg/ 1mL, 0.3 mg (0.3 ml) IM OR via Epinephrine Auto-Injector, if available.

Suspected Croup:

1. Notes:
   A. Croup is most common in the fall and winter with the onset of symptoms at night.
   B. Croup is most common in children 6 months to 6 years of age.
   C. Patients will likely have a recent history of upper airway infection or fever.
   D. If foreign body is suspected, contact Medical Control prior to administration of epinephrine.
2. Consider humidified oxygen
3. If patient presents with moderate to severe croup administer Epinephrine per MCA selection:

MCA Selection

☑ Racepinephrine 2.25% inhalation solution via nebulizer

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

☐ Epinephrine 5 mg (1mg/1ml) nebulized

4. Do not delay transport.
5. Symptom improvement should occur within 10 to 30 minutes.

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
2. Airway management should take place in order of least invasive to most invasive, titrating to effective ventilation and oxygenation.
3. If opioid overdose is suspected, administer Naloxone according to MI-MEDIC cards. If MI-MEDIC is unavailable, administer Naloxone 0.1 mg/kg IV/IO/IN/IM while ventilating with the BVM.

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 core temperature of **101 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. Obtain baseline temperature and document method used.
2. Facilitate passive cooling by removing excess clothing and blankets.

3. If the child has not been given acetaminophen in last four (4) hours, is alert, and:
   a. The patient's weight is known, utilize that weight and MI-MEDIC for dosing.
   b. The patient's weight is not available, utilize length based tape and MI-MEDIC for dosing.
   c. If MI-Medic is not available, give **Acetaminophen 15 mg/kg PO or see chart.**

4. If child has not been given ibuprofen (Motrin/Advil) in the last 6 hours, is alert, and:
   a. The patient's weight is known, utilize that weight and MI-MEDIC for dosing.
   b. The patient's weight is not available, utilize length based tape and MI-MEDIC for dosing.
   c. If MI-MEDIC is not available, give ibuprofen 10 mg/kg PO or see chart
5. If any question concerning alertness or ability to swallow, **DO NOT ADMINISTER.**

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

Dosing Table

Child's Weight (AGE)	Children's Acetaminophen Elixir (160 mg/5ml)	Children's Ibuprofen Elixir (100 mg/5 ml)
6-12 lbs. (0-2 mos.)	1.5 mL (48 mg)	DO NOT GIVE
13-16 lbs. (3-6 mos.)	3 mL (96 mg)	DO NOT GIVE
17-20 lbs. (7-10 mos.)	4 mL (128 mg)	4 mL (80 mg)
21-25 lbs. (11-18 mos.)	5 mL (160 mg)	5 mL (100 mg)
26-31 lbs. (19 mos-3yrs)	6 mL (192 mg)	6 mL (120 mg)
32-35 lbs. (3-4 yrs.)	7 mL (224 mg)	7.5 mL (150 mg)
36-40 lbs. (4-5 yrs.)	8 mL (256 mg)	8.5 mL (170 mg)
41-45 lbs. (5-6 yrs.)	9 mL (288 mg)	9.5 mL (190 mg)
41-51 lbs. (5-6 yrs.)	10 mL (320 mg)	11 mL (220 mg)
52-64 lbs. (7-9 yrs.)	12 mL (384 mg)	13 mL (260 mg)
65-79+ lbs. (10-14 yrs.)	15 mL (480 mg)	15 mL (300 mg)

Pediatric Seizures

I. Follow **Patient Assessment Protocol**.
II. **IF PATIENT IS ACTIVELY SEIZING:**
A. Protect patient from injury.
B. Do not force anything between teeth.
C. Administer Midazolam IM according to the MI-MEDIC cards
a. If MI-MEDIC unavailable administer Midazolam 0.1mg/kg IM
b. Maximum individual dose 10 mg

D. Measure blood glucose level.

MCA Approval of Blood Glucose Testing by specific MFR Agencies
(Provide participating agency list to BETP)

☑ YES ☐ NO

E. Start IV/IO if needed.
F. If glucose is less than 40 mg/dL for patients less than 1 year or 60 mg/dL for patients 1 year and above, administer Dextrose according to MI-MEDIC cards.
G. If MI-MEDIC unavailable, administer Dextrose 0.5 g/kg
a. For patients up to 2 months of age, utilize Dextrose 12.5%
b. For patients between 2 months and 6 years of age, utilize Dextrose 25%
c. For patients age 7 or greater, utilize Dextrose 50%
H. Per MCA selection, if unable to start IV, administer Glucagon according to MI-MEDIC cards.

Glucagon Included?
☑ Yes ☐ No

I. If MI-MEDIC unavailable
a. For patients up to 4 years of age, administer Glucagon 0.5 mg IM
b. For patients aged 5 or greater, administer Glucagon 1 mg IM

*The IO route is a last resort if IV cannot be established and glucagon is not available with online Medical Control approval.

J. If IV established and **Midazolam IM** has not been administered, administer **Midazolam, or Lorazepam** per MCA selection.

Medication Options:
(Choose One)

☑ Midazolam 0.05 mg/kg IV/IO, maximum individual dose 5 mg

OR

☐ Lorazepam 0.1 mg/kg IV/IO, max single dose 4 mg, may repeat in 5 minutes if seizure activity continues; not to exceed 0.2 mg/kg total (maximum of 8 mg)

K. If seizures persist, per MCA selection, repeat **Midazolam, or Lorazepam** at the same dose or contact medical control for further instructions.

III. If patient is not currently seizing, but has altered mental status, refer to **ALTERED MENTAL STATUS PROTOCOL.**

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.

Criteria for Transport

1. This protocol applies to every EMS response resulting in the need to transport pediatric patients who are of an age/weight that require the use of a child safety seat from the scene of an emergency. Pediatric patients that do not require a child safety seat should be transported following the same procedure as adult patients.
2. 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 child who is not injured or ill.
    b. The transport of a child who is ill and/or injured and whose condition does not require continuous and/or intensive medical monitoring or intervention.
    c. The transport of an ill or injured child who does require continuous and/or intensive monitoring or intervention.
    d. The transport of a child whose condition requires spinal motion restriction and/or lying flat, refer to Spinal Precautions Procedure
    e. The transport of a child or children who require transport as part of a multiple patient transport (newborn with mother, multiple children, etc.)

Procedure

1. The child's age and weight shall be considered when determining an appropriate restraint system. Child seat models offer a wide range of age/weight limits, so each individual device must be evaluated to determine the appropriateness of use.
2. When possible, and with the exception of a minor vehicle crash (e.g. "fender-bender"), avoid transporting children in their own safety seats if the seat was involved in a motor vehicle crash. Use of the child's own seat can be considered if no other restraint systems are available and the seat shows no visible damage/defect.
3. Transportation of a child in any of the following ways is not allowed under normal circumstances:
    a. Unrestrained;
    b. On a parent/guardian/other caregiver's lap or held in their arms;
    c. Using only horizontal stretcher straps, if the child does not fit according to cot manufacturer's specifications for proper restraint of patients;
    d. On the multi-occupant bench seat or any seat perpendicular to the forward motion of the vehicle, even if the child is in a child safety seat.
4. For infants and newborns, be sure to maintain body heat.

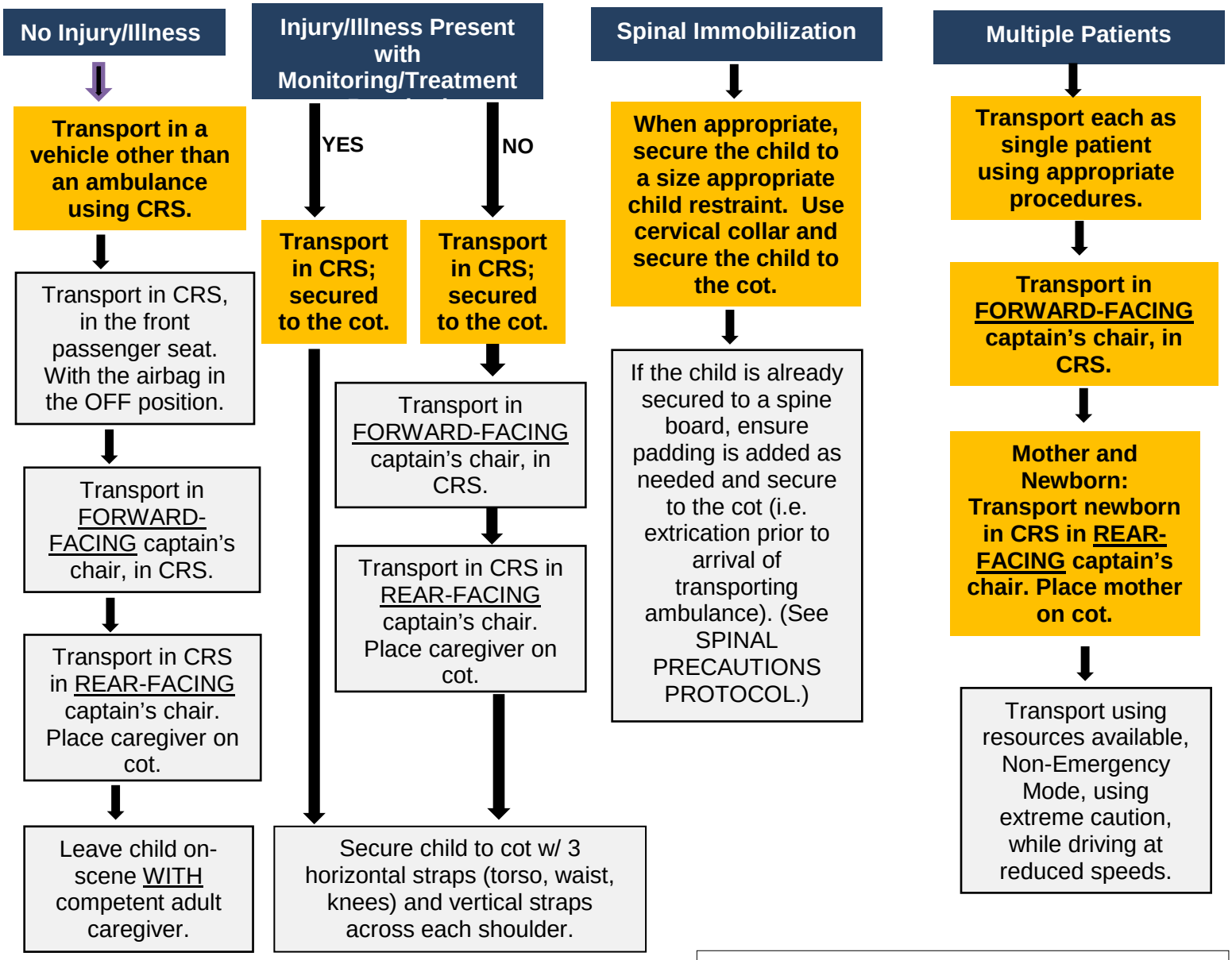
Situation Guidelines:
(*Ideal transport method is in **bold**, with acceptable alternatives listed if ideal is not achievable)

1. Transport of an uninjured/not ill child
    a. **Transport child in a vehicle other than a ground ambulance using a properly-installed, size-appropriate child restraint system**.
    b. Transport in a size-appropriate child seat properly-installed in the front passenger seat of the ambulance with the airbags off or in another forward-facing seat.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References: Transportation of children in emergency ground ambulances. https://www.nasemso.org/Committees/STC/documents/NHTSA-Safe-Transportation-of-Children-in-Ambulances-2012.pdf

   c. Transport in a size-appropriate child seat properly-installed on the rear-facing EMS provider's seat.
   d. Consider delaying the transport of the child (ensuring appropriate adult supervision) until additional vehicles are available without compromising other patients on the scene. Consult medical control if necessary.
2. Transport of an ill/injured child not requiring continuous intensive medical monitoring or interventions
   a. **Transport child in a size-appropriate child restraint system secured appropriately on the cot.**
   b. Transport child in the EMS provider's seat in a size-appropriate restraint system.
3. Transport of an ill/injured child whose condition requires continuous intensive monitoring or intervention.
   a. **Transport child in a size-appropriate child restraint system secured appropriately to the cot.**
   b. With the child's head at the top of the cot, secure the child to the cot with three horizontal straps and one vertical strap across each shoulder. If assessment/intervention requires the removing of restraint strap(s), restraints should be re-secured as quickly as possible.
4. Transport of an ill/injured child who requires spinal motion restriction or lying flat.
   a. **Secure the child to a size-appropriate child restraint when appropriate, use Cervical Collar, and secure child to the cot.**
   b. If the child is already secured to a spine board, ensure padding is added as needed and secure to the cot (i.e.: extrication prior to arrival of transporting ambulance). (See **Spinal Precautions protocol).**
5. Transport of a child or children requiring transport as part of a multiple patient transport (newborn with mother, multiple children, etc.)
   a. **If possible, for multiple patients, transport each as a single patient according to the guidance provided for situations 1 through 4. For mother and newborn, transport the newborn in an approved size-appropriate restraint system in the rear-facing EMS provider seat with a belt-path that prevents both lateral and forward movement, leaving the cot for the mother**.
   b. Consider the use of additional units to accomplish safe transport, remembering that non-patient children should be transported in non-EMS vehicles, if possible.
   c. When available resources prevent meeting the criteria for situations 1 through 4 for all child patients, transport using space available in a non-emergency mode, exercising extreme caution and driving at a reduced speed.
   d. **Note:** Even with childbirth in the field, it is NEVER appropriate to transport a child held in the parent/guardian/caregiver's arms or on a parent/guardian/caregiver's lap.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References: Transportation of children in emergency ground ambulances. https://www.nasemso.org/Committees/STC/documents/NHTSA-Safe-Transportation-of-Children-in-Ambulances-2012.pdf



TRANSPORTATION OF A CHILD IN ANY OF THE FOLLOWING WAYS IS NOT ALLOWED UNDER NORMAL CIRCUMSTANCES:

1) **Unrestrained**
2) **On someone's lap**
3) **Only using horizontal stretcher straps when the child does not fit according to the manufacturers recommendations**
4) **On the bench seat or any seat perpendicular to the forward motion of the vehicle, even if the child is in a child safety seat**

LEGEND
= Ideal Transport Method
= Acceptable Alternative Transport Method if Ideal is not achievable

CRS: Appropriately Sized Child Restraint Device (car seat, ACR, Pedi-Mate, Safe Guard, integrated captain's chair, etc.)

MUST REFER TO MANUFACTURER'S INSTRUCTIONS.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References: Transportation of children in emergency ground ambulances. https://www.nasemso.org/Committees/STC/documents/NHTSA-Safe-Transportation-of-Children-in-Ambulances-2012.pdf

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Adult Cardiac

Table of Contents

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 Protocol**.
- If it is unknown whether the arrest is traumatic or medical, continue with this protocol.
- Patients displaying a Do Not Resuscitate order or bracelet – follow **DNR Procedure**.
- Initiate ALS response if available.
- CPR should be consistent with current guidelines established by the American Heart Association.
- Focus should be on prompt defibrillation and effective chest compressions.

1. 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.
2. Initiate CPR or continue CPR; apply and use AED/defibrillator (per **Electrical Therapy Procedure**) as soon as available.
3. Ensure high quality CPR
    A. Chest compression rate is 100 to 120/min.
    B. Chest compression depth for adults is 2 inches (5 cm) but not greater than 2.4 inches (6 cm).
    C. Allow complete chest recoil after each compression,
    D. Minimize interruptions in compressions.
    E. Avoid excessive ventilation.
    F. Restart CPR immediately after any defibrillation attempts.
    G. Keep pauses in CPR to a minimum. Immediately after AED recommends shock resume compressions until AED is fully charged, then immediately after shock, resume compressions without checking pulse or rhythm. Avoid pauses in CPR during airway management.
    H. CPR sequence is CAB (Compressions, Airway, Ventilation) for all ages, except the ABC sequence should be used in drowning.
    I. For pregnant patients, a rescuer should manually displace the uterus to the patient's left during CPR.
    J. Change rescuer doing compressions every 1-2 minutes (100-200 compressions) to avoid fatigue.
4. Establish a patent airway, maintaining C-Spine precaution if indicated, using appropriate airway adjuncts and high flow oxygen. See **Emergency Airway Procedure.**
5. 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.

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, initiate transport.

7. Start an IV/IO NS KVO. If IV is attempted and is unsuccessful, after 2 attempts start an IO line per **Vascular Access & IV Fluid Therapy Procedure.** IO may be first line choice.
8. If hypovolemia suspected: Give one liter bolus, may repeat as necessary, Normal Saline Solution.

9. If quantitative waveform capnography is available and $ETCO_2$ is < 10 mm Hg, attempt to improve CPR quality.

10. Administer Epinephrine 1 mg/10 ml 1 mg IV/IO every 3 to 5 minutes

11. Prior to advanced airway placement, utilize ventilation periods to visualize the ECG rhythm without compression artifact, this will allow you to plan ahead for the assessment period at the end of the two minute CPR cycle.

12. Administer antidysrhythmic according to rhythm check
    A. For Ventricular Fibrillation (VF) or pulseless Ventricular Tachycardia (VT), per MCA selection, administer Amiodarone 300 mg IV/IO OR Lidocaine 100mg IV/IO

Per MCA Selection
☑ Amiodarone 300mg IV/IO (May repeat once 150 mg IV/IO)
or
☐ Lidocaine 100mg 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
13. Consider and treat reversible causes of cardiac arrest.
    a. If suspected hyperkalemia or tricyclic antidepressant overdose, administer Sodium Bicarbonate 1mEq/kg IV/IO
    b. If hyperkalemia suspected in dialysis patient administer: Calcium Cl (10%) 1gm/10 mL IV/IO
    c. Assess for tension pneumothorax or misplaced ETT:
        i. If tension pneumothorax suspected, perform needle decompression per procedure for pleural decompression.
    d. Hypothermia, follow **Hypothermia Cardiac Arrest Protocol**.
14. After insertion of advanced airway, monitor capnography to confirm appropriate tube placement and deliver continuous CPR, without pauses for ventilation. Ventilations delivered at 8-10 breaths per minute or 1 breath every 6 - 8 seconds.

15. Additional basic and/or advanced life support care as appropriate.
16. Consider termination of resuscitation per **Termination of Resuscitation Protocol**.

Notes:

1. Excellent CPR is a priority:
   A. 30 compressions: 2 ventilations in groups of 5 cycles, over 2 minutes.
   B. Push hard ≥ 2 inches and fast (≥100/min) and allow full recoil of chest during compressions.
   C. Change rescuer doing compressions every 2 minutes to avoid fatigue or utilize automated mechanical CPR devices, if available.
   D. Restart CPR immediately after any defibrillation attempts.
   E. 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.
   F. 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 shock or place AED in manual mode.
   G. For biphasic devices shock with energy levels following manufacturers' recommendations (120 – 200 J). If unknown use the maximum available. For monophasic devices use 360 J.
   H. Confirm and document tube placement by physical exam, measurement of exhaled CO2 and/or use of other MCA approved secondary confirmation device.
   I. If possible, contact medical control prior to moving or transporting patient.
   J. Continue resuscitation attempts and initiate transport, unless field termination is ordered by Medical Control.
   K. Treat reversible causes.
   L. Manual chest compressions remain the standard of care for the treatment of cardiac arrest. Mechanical chest compression devices may be a reasonable alternative to conventional CPR in specific settings where the delivery of high-quality manual compressions may be challenging or dangerous for the provider (eg, limited rescuers available, prolonged CPR, CPR during hypothermic cardiac arrest, CPR in a moving ambulance).
   M. Supraglottic airways are an acceptable alternative for endotracheal intubation.
   N. An impedance threshold device may be utilized during CPR, if available. Device should be discontinued immediately upon return of spontaneous circulation.

This protocol should be followed for all adult **Cardiac Arrests**. Medical cardiac arrest patients undergoing attempted resuscitation **should not be transported** unless return of spontaneous circulation (ROSC) is achieved or transport is ordered by medical control or otherwise specified in protocol.

If traumatic in origin, refer to **Traumatic Arrest Protocol**

- For Unknown Origin, Continue this protocol.
- Contact ALS.
- CPR should be per AHA guidelines.

For Patients with a DNR order, follow **DNR Protocol**

Confirm Cardiac Arrest

Initiate or continue **HIGH QUALITY CPR**

Apply and use AED/defibrillator ASAP

Establish an airway, refer to **Emergency Airway Procedure**

Reassess as indicated. If no ALS and no ROSC after three, two minute cycles or CPR, **contact medical control** and initiate transport.

Establish access, refer to **Vascular Access & IV Fluid Therapy Procedure**

Consider and treat reversible causes of cardiac arrest

If hyperkalemic or tricyclic overdose → **Sodium Bicarbonate 1mEq/kg IV/IO**

If hyperkalemic → **Calcium Cl (10%) 1gm/10mL IV/IO**

If tension pneumothorax → Refer to **Needle Decompression Procedure**

If hypothermic → Refer to **Hypothermia Protocol**

All patients → **Epinephrine 1mg (1mg/10mL)** every 3 to 5 minutes

If recurrent VF/VT → **Amiodarone 300 mg IV/IO** or **Lidocaine 100 mg IV/IO**

Per MCA Selection
☑ Amiodarone 300mg **or** ☐ Lidocaine 100mg

If Torsades de Pointes → **Magnesium Sulfate 2g IV/IO**

Contact Medical Control

Consider termination of resuscitation per
Termination of Resuscitation Protocol

Bradycardia

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 Protocol**.

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

2. Administer Atropine 0.5 mg IV/IO 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. Follow the **Electrical Therapy Procedure.**
4. Per MCA selection, provide sedation per **Patient Sedation Procedure**.
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
    b. Administer 1-2 mL
    c. Repeat every 3 to 5 minutes
    d. Titrate SBP greater than 90 mm/Hg

Notes:

1. Some patients may not tolerate the pacing stimulus to the skin and chest wall that occurs with transcutaneous pacing. In these cases, consider sedation if SBP > 90. (See **Patient Sedation Procedure**)
2. Consider possible etiologies:
    A. Hyper/hypokalemia, other metabolic disorders
    B. Hypothermia
    C. Hypovolemia (including vomiting/diarrhea)
    D. Hypoxia
    E. Toxins/ overdose (e.g. beta-blocker or calcium channel-blocker)
    F. Tamponade
    G. Tension pneumothorax
3. Transcutaneous pacemaker electrode pads may be applied to these patients without initiating pacing so that the pacemaker is ready if patient condition deteriorates.
4. For symptomatic high-degree (second-degree or third-degree) AV block, begin pacing without delay.
5. Atropine 0.5 mg should be administered by rapid IV/IO push and may be repeated every 3-5 minutes, to a maximum dose of 3 mg. Atropine is ineffective and should be avoided in heart transplant patients.

Tachycardia

This protocol is for paramedic use only

Aliases: SVT, V-tach, Supraventricular tachycardia, Ventricular Tachycardia, Uncontrolled Atrial Fibrillation, A-fib

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. It is not intended to treat tachycardia that is secondary to underlying conditions (i.e., dehydration, trauma or toxins). Consultation with online medical control should be considered for complex patients in whom the cause of the arrhythmia is not obvious. SYNCHRONIZED CARDIOVERSION PRECEDES DRUG THERAPY FOR UNSTABLE PATIENTS. Unstable patients may be defined as those suffering 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. Adenosine is only used for regular monomorphic rhythm tachycardia.

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

UNSTABLE

4. If time and condition allow prior to cardioversion, sedate per MCA selection. Refer to **Patient Sedation Procedure**.
5. For unstable patients with a **REGULAR NARROW OR WIDE** rhythm, perform synchronized cardioversion beginning at 100 J, increasing to 200 J, 300 J, 360 J. (Use manufacturers suggested biphasic energy dose, 100 J).
6. For unstable patients with an **IRREGULAR NARROW** rhythm, perform synchronized cardioversion beginning at 200 J, increasing to 300 J, 360 J. (Use manufacturers suggested biphasic energy dose, 120 – 200 J).
7. For patients that are unstable with an **IRREGULAR WIDE** rhythm, perform defibrillation beginning at 200 J, increasing to 300 J, 360 J. (Use manufacturers suggested biphasic energy dose 150 – 200 J).

STABLE

8. Attempt Vagal Maneuvers
    a. Ensure the patient is on oxygen and on a cardiac monitor.
    b. Run ECG strip during the procedure.
    c. Instruct the patient to cough forcefully several times or
    d. Have the patient take a deep breath and bear down.
    e. DO NOT USE CAROTID MASSAGE.
9. Start an IV NS KVO. A large bore antecubital IV should be secured whenever possible.
10. Obtain 12 lead ECG, if immediately available.
11. If the rhythm is regular, consider Adenosine 6 mg rapid IV push through the most proximal injection site. This should be followed immediately with 20 ml NS flush.

12. If conversion does not occur, administer Adenosine 12 mg IV using the same technique as stated above.
13. If rhythm is stable with narrow QRS contact medical control for possible orders.
14. If rhythm is stable with wide QRS administer Amiodarone ***OR*** Lidocaine per MCA Selection.

Medication Options
(Choose One)
☐Amiodarone - 150 mg IV over 10 minutes
OR
☑Lidocaine - 1 mg/kg IV

15. If at any point a patient becomes unstable, perform synchronized cardioversion.
16. Administer Magnesium Sulfate 2 gm IV/IO for suspected torsades de pointes.
17. Per MCA selection, administer additional Amiodarone 150 mg IV over 10 minutes as needed to a maximum of 450 mg OR Lidocaine 0.5 -1.0 mg/kg IV push every 5 - 10 minutes to a maximum of 3 mg/kg.

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 2gm to 100 or 250 ml of NS and infusing over approximately 10 minutes.

Pulmonary Edema / CHF

This protocol is to be followed for patients in acute respiratory distress situations, not chronic.

1. Follow **General Pre-Hospital Care Protocol**.
2. Initiate supplemental oxygen by non-rebreather mask.
3. Position patient upright with legs dependent, if possible.

4. Consider CPAP (if available) per **CPAP/BiPAP Procedure.**

5. Inquire of all patients (male and female) if they have taken Viagra (sildenafil citrate) or similar erectile dysfunction medications or medications used to treat pulmonary hypertension in the last 48 hours. If yes, DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL. 
6. If BP above 100 mmHg, administer Nitroglycerin 0.4 mg SL. Repeat every 3-5 minutes if BP above 100 mmHg. Nitroglycerin may be administered prior to IV placement if the BP is above 120 mmHg. Continue administration in the presence of CPAP.
7. If wheezing, administer nebulized Albuterol 2.5 mg/3ml.

8. If indicated, consider an advanced airway.
9. Obtain 12-lead ECG if available. Follow local MCA transport protocol if ECG is positive for ST segment elevation myocardial infarction (STEMI) and alert hospital as soon as possible.(May be a BLS skill, per MCA selection, see **12 Lead ECG Procedure**)

10. If BP is less than 100 mmHg and signs/symptoms of shock, administer Epinephrine by push dose (dilute boluses) per **Epinephrine Protocol**.
    a. Prepare (10 mcg/mL) by adding 1mL of 1mg/10mL Epinephrine in 9mL NS, then
    b. Administer 1-2 mL every 2 to 5 minutes and titrate SBP greater than 90 mm/Hg.

This protocol is to be followed for patients in acute respiratory distress situations, not chronic.

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

- Initiate supplemental oxygen by non-rebreather mask.
- Position patient upright with legs dependent, if possible.

Consider CPAP per **CPAP/BiPAP Procedure**

- Inquire of all patients (male and female) if they have taken Viagra (sildenafil citrate) or similar erectile dysfunction medications or medications used to treat pulmonary hypertension in the last 48 hours. If yes, DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL.
- If BP above 100 mmHg, administer Nitroglycerin 0.4 mg SL. Repeat every 3-5 minutes if BP above 100 mmHg. Nitroglycerin may be administered prior to IV placement if the BP is above 120 mmHg. Continue administration in the presence of CPAP.

If wheezing, administer nebulized Albuterol 2.5 mg/3ml.

Obtain 12 Lead ECG

Contact Medical Control

Administer push dose Epinephrine per **Epinephrine Protocol**

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.

1. Follow General Pre-Hospital Care Protocol.
2. Administer oxygen 4 L/min per nasal cannula if pulse oximetry is not available. Oxygen is only required if pulse oximetry SaO2 < 94%.

3. Assist patient in the use of their own aspirin (if MCA approved, and patient not allergic to aspirin, administer aspirin up to 325 mg). Aspirin should be chewed and swallowed.

■ MCA selection for MFR	■MCA selection for EMT

4. Inquire of all patients (male and female) if they have taken Viagra (sildenafil citrate) or similar erectile dysfunction medications or medications used to treat pulmonary hypertension in the last 48 hours. If yes, DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL.
5. Assist patient in the use of their own Nitroglycerin sublingual tabs (check expiration date), if available, and if the patient's systolic BP is above 120 mmHg, for a maximum of 3 doses.

6. Administer aspirin up to 325 mg PO, chew and swallow if no aspirin or suspected insufficient dose since the onset of chest pain.
7. Start an IV NS KVO. If the patient has a BP of less than 100 mmHg, administer an IV/IO NS fluid bolus up to 1 liter wide open, in 250 ml increments and reassess.
8. Inquire of all patients (male and female) if they have taken Viagra (sildenafil citrate) or similar erectile dysfunction medications or medications used to treat pulmonary hypertension in the last 48 hours. If yes, DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL.
9. Administer nitroglycerin 0.4 mg sublingual if BP is above 100 mmHg. Dose may be repeated at 3 to 5 minute intervals if chest pain persists and BP remains above 100 mmHg. Nitroglycerin may be administered prior to IV placement if the BP is above 120 mmHg.

10. Obtain 12-lead ECG if available. Follow local MCA transport protocol if ECG is positive for acute ST Elevation Myocardial Infarction (STEMI) and alert the hospital as soon as possible. (Per MCA selection, may be a BLS procedure, follow 12 Lead ECG Procedure)
    a. CAUTION with ADMISTERATION of NITROGYLGERIN if an Inferior Wall MI is suspected or confirmed.

11. For patients with suspected cardiac chest pain refractory to Nitroglycerin, consider Fentanyl 1 mcg/kg IV/IO (IN, if available). Maximum single dose 100 mcg, may repeat one time. Total dose may not exceed 200 mcg.

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.

Follow General Pre-hospital Care Protocol

Administer oxygen 4 L/min per nasal cannula if pulse oximetry is not available. Oxygen is only required if pulse oximetry SaO2 < 94%.

Assist patient in the use of their own aspirin (if MCA approved, and patient not allergic to aspirin, administer aspirin up to 325 mg). Aspirin should be chewed and swallowed.

Aspirin: ■MCA selection for MFR ■MCA selection for EMT

Taken ED or pulmonary HTN meds <48 hrs?

Yes

DO NOT ADMINISTER NTG

Contact Medical Control

No

Assist patient in the use of their own Nitroglycerin, if available, and BP above 120 mmHg, for a maximum of 3 doses.

IV Access and administer fluid bolus (250 ML)
Titrate to BP >100mmHg

Inquire of all patients (male and female) if they have taken Viagra (sildenafil citrate) or similar erectile dysfunction medications or medications used to treat pulmonary hypertension in the last 48 hours. If yes, DO NOT ADMINISTER NITROGLYCERIN AND CONTACT MEDICAL CONTROL.
Administer nitroglycerin 0.4 mg sublingual if BP is above 100 mmHg. Dose may be repeated at 3 to 5 minute intervals if chest pain persists and BP remains above 100 mmHg. Nitroglycerin may be administered prior to IV placement if the BP is above 120 mmHg.

Obtain 12 Lead
If STEMI, alert receiving facility
Follow local transport protocol

CAUTION with administration of NITRO to suspected or confirmed Inferior Wall MI

For patients with suspected cardiac chest pain refractory to Nitroglycerin, consider Fentanyl 1 mcg/kg IV/IO (IN, if available). Maximum single dose 100 mcg, may repeat one time. Total dose may not exceed 200 mcg.

Contact Medical Control

Nitroglycerin Drip Supplement (OPTIONAL)

This protocol is for 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.

This protocol provides for the use of a Nitroglycerin Drip in the pre-hospital setting for systems that can justify the use based on long transport times. Implementation of the protocol requires additional paramedic training approved by the Medical Control Authority and Department. A suggested training outline is included in this protocol.

Indications for Nitroglycerin Drip

1. Chest pain secondary to presumed cardiac ischemia, acute coronary syndrome or acute myocardial infarction. The nitroglycerin drip may be used after failure of SL nitroglycerin and narcotic administration to relieve cardiac chest pain treated using the **Chest Pain / Acute Coronary Syndrome** protocol.
2. Acute pulmonary edema / CHF. The nitroglycerin drip may be used as a supplement to SL nitroglycerin treatment using the **Acute Pulmonary Edema / CHF** protocol.

Equipment

1. At least one functioning IV. A second IV preferable to allow additional IV fluid or medication administration.
2. Infusion pump and proper vented tubing are required.

Administrations Guidelines

1. Dosing
   A. Nitroglycerin is mixed in NS. Dosing chart: see Table I
   B. For pre-hospital use, begin the nitroglycerin drip at 10 mcg/min and increase by 10 mcg/min at 5 minute intervals if chest pain persists and systolic blood pressure remains above 100 mmHg. Maximum dose is 200 mcg/min.
   C. It titrating nitroglycerin for Pulmonary Edema/CHF, titrate until systolic BP is 120 or below.
2. Patient monitoring
   A. If pain resolves completely, maintain drip at current rate of administration.
   B. If pain continues, increase the drip rate by 10 mcg/min every 5 minutes until pain resolves or systolic BP falls below 100 mmHg.
   C. If systolic BP falls below 90 mmHg during titration, decrease the drip rate by 10 mcg/min and give a NS IV/IO fluid bolus up to 1 liter, wide open. If BP remains below 90 mmHg, discontinue drip.

Table I. Dosing Chart for Nitroglycerin

	Amount to infuse in ml/hr	
Dose (mcg/min)	50 mg/250 ml 100 mg/500 ml (200 mcg/ml)	100 mg/250 ml 200 mg/500 ml (400 mcg/ml)
10	3	1.5
20	6	3
30	9	5
40	12	6
50	15	8
60	18	9
70	21	10
80	24	12
90	27	14
100	30	15
110	33	17
120	36	18
130	39	19
140	42	21
150	45	23
160	48	24
170	51	26
180	54	27
190	57	29
200	60	30

Nitroglycerin Drip Training Guidelines

Suggested Training Requirements for Paramedics

1. Training requirements for paramedics = 2 hours
   A. Nitroglycerin training = 1 hour
   B. Infusion pump training = 1 hour

2. Pharmacology and actions of nitroglycerin
   A. Cardiovascular effects
      a. Decreases preload: reduces venous tone, decreasing venous load on the heart.
      b. Decreases afterload: reduces peripheral vascular resistance.
      c. Increases myocardial oxygen supply: causes dilatation of coronary arteries and relief of coronary artery spasm.
   B. Generalized effect: causes generalized smooth muscle relaxation

3. Administrations Guidelines
   A. Dosing
      a. Nitroglycerin is mixed in NS. Dosing chart: see Table I.
      b. For pre-hospital use begin the nitroglycerin drip at 10 mcg/min and increase by 10 mcg/min at 5 minute intervals if chest pain persists and systolic blood pressure remains above 100 mmHg.
      c. If titrating nitroglycerin for Pulmonary Edema / CHF, titrate until systolic BP is 120 mmHg or below.
      d. For inter-hospital patient transfers a nitroglycerin drip may be continued at the rate begun at the transferring hospital. Titrate the drip as above to relieve chest pain or per sending facility orders.

4. Patient monitoring and titration of nitroglycerin drip
   A. Patient should have continuous cardiac rhythm monitoring and frequent blood pressure monitoring. Blood pressure should be rechecked after each dosing change.
   B. If pain resolves completely, maintain drip at current rate of administration.
   C. If pain continues, increase the drip rate by 10 mcg/min every 5 minutes until pain resolves or systolic BP falls below 100 mmHg.
   D. Maximum dose is 200 mcg/min.
   E. If systolic BP falls below 90 mmHg during titration, decrease the drip rate by 10 mcg/min and give a NS IV/IO fluid bolus up to 1 liter, wide open. If BP remains below 90 mmHg, discontinue drip.

5. Side effects and special notes
   A. Peripheral vasodilatation can cause profound hypotension and reflex tachycardia.
   B. Common side effects: throbbing headaches, flushing, dizziness
   C. Less common: orthostatic hypotension, sometimes marked. Nitroglycerin does not provide controlled hypotension.
   D. Because nitroglycerin causes generalized smooth muscle relaxation, it may be effective in relieving chest pain caused by esophageal spasm.

MUSKEGON COUNTY

Protocols

Protocol Number	Protocol Name
	Pediatric Cardiac

Table of Contents

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 Protocol**.
- If it is unknown whether the arrest is traumatic or medical, continue with this protocol.
- 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.

Note: Primary cardiac arrest in the pediatric patient is rare. Most arrests are secondary to respiratory failure. Consider maintaining basic airway management techniques if effective. Advanced airway insertion attempts should be performed in such a manner as to keep CPR interruptions to a minimum. Medications given during cardiac arrest are given IV or IO.

1. Confirm Arrest
    a. Assess for signs of normal breathing.
    b. Check a carotid or brachial pulse as age appropriate for not more than 10 seconds.
2. Initiate CPR or continue CPR if already in progress and apply and use AED per **Electrical Therapy Procedure** as soon as possible.
3. Ensure CPR quality
    a. Compressions at least 1.5” in depth for infants, 2” in depth for children.
    b. Compression rate at least 100-120 per minute (An FDA approved mechanical CPR device operating at the manufacturers pre-set rate meets this requirement).
    c. Avoid excessive ventilation (volume and rate).
4. Continue CPR with minimal interruptions, changing the rescuer doing compressions every 2 minutes, when possible.
5. Initiate ALS response if available.
6. Establish a patent airway, maintaining C-Spine precautions if indicated, using appropriate airway adjuncts and high flow oxygen. Ventilations with BVM may be as effective as endotracheal intubation in children. Any patient 8 years and under shall be ventilated via BVM or other basic maneuver.

7. 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, initiate transport.
8. If unable to ventilate or unable to maintain a patent airway, establish an airway with a supraglottic airway when indicated per **Emergency Airway Procedure**.
    a. Minimize interruptions in compressions during airway placement to less than 10 seconds.
    b. After insertion provide continuous CPR, without pauses for ventilation. Ventilations delivered at 10 breaths per minute or 1 breath every 6 seconds. See **Emergency Airway Procedure.**

   c. All airway adjuncts should be utilized with high flow oxygen.
   d. Utilize waveform capnography (if available).
9. Verify CPR quality frequently and anytime rescuer providing compressions or ventilations change.

10. Start an IV/IO NS KVO. IO may be the first choice. See **Vascular Access & IV Fluid Therapy Procedure.**

11. Check rhythm, shock if indicated (**2 J/kg**) and continue CPR.
12. Administer Epinephrine
   a. 1 mg/10 ml, 0.01 mg/kg (0.1 ml/kg)
   b. Max dose 1mg (10 ml)
   c. Repeat every 3-5 minutes
13. If airway has not been established, **and** unable to ventilate, establish airway per **Emergency Airway Procedure.**
   a. Minimize interruptions in compressions during airway placement to less than 10 seconds.
   b. Supraglottic airways are an acceptable alternative for endotracheal intubation.
   c. After interventional airway is established, ventilation rate is 10 breaths per minute
14. Utilize waveform capnography; if PETCO2 is < 10 mm Hg attempt to improve CPR quality.
15. Recheck rhythm every 2 minutes
16. If shockable rhythm persists
   a. Shock at **4 J/kg** every 2 minutes with immediate resumption of compressions. Subsequent shocks must be at least 4 J/kg, but may escalate to 10J/kg or adult dosage.
   b. Administer Amiodarone
      i. 5 mg/kg
      ii. Max dose 300 mg
      iii. May be repeated if continuous shockable rhythm up to 2 more times (maximum total dose 15 mg/kg or 450 mg)
17. Consider causes of arrest (non-shockable)
   a. Hypovolemia – Administer 20 ml/kg NS IV/IO bolus
   b. Tension pneumothorax – see **Pleural Decompression Procedure**
   c. Hypothermia – see **Hypothermia Cardiac Arrest Protocol**, consider rapid transport
   d. Hyperkalemia (renal failure) – Contact Medical Control
      i. Administer Calcium Chloride (10%), 20 mg/kg (0.2 ml/kg), max dose 1 gm
      ii. Administer Sodium Bicarbonate 1 mEq/kg IV/IO with 20 ml NS flush between medications
18. Additional basic and/or advanced life support care as appropriate.

19. Consider termination of resuscitation per **Termination of Resuscitation Protocol.**

Pediatric Bradycardia

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).

1. If heart rate is < 60 despite adequate oxygenation and ventilation, perform CPR.
2. Establish vascular access
3. Apply cardiac monitor to identify rhythm
4. If HR continues to be less than 60, despite oxygenation & ventilation
    A. Administer Epinephrine 1mg/ 10mL,
        i. 0.01 mg/kg (0.1 ml/kg) IV/IO up to 1 mg (10 ml),
        ii. Repeat every 3-5 minutes.
    B. If HR is unresponsive to epinephrine:
        i. Administer Atropine 0.02 mg/kg IV/IO (minimum dose 0.1 mg, maximum single dose 0.5 mg)
        ii. May repeat once in 5 minutes, if effective.
    C. If HR is unresponsive to Epinephrine and Atropine:
        i. Consider transcutaneous pacing at rate up to 100 bpm per **Electrical Therapy Procedure.**
        ii. Sedation may be used to facilitate transcutaneous pacing per MCA selection. Refer to **Patient Sedation Procedure**.

Notes:

1. Signs of cardiopulmonary compromise include:
    a. Hypotension is SBP less than 70 + (age x 2).
    b. Acutely altered mental status.
    c. Signs of shock - indicated by absent or weak peripheral pulses, increased capillary refill time, skin cool/mottled.
    d. Respiratory difficulty indicated by increased work of breathing (retractions, nasal flaring, grunting), cyanosis, altered level of consciousness (unusual irritability, lethargy, failure to respond to parents), stridor, wheezing.
2. When CPR is required, a precise diagnosis of the specific bradyarrhythmia is not important.
3. If severe hypothermia follow **Hypothermia Cardiac Arrest Protocol**

Pediatric Tachycardia

Aliases: Supraventricular tachycardia (SVT), atrial fibrillation (a-fib), atrial flutter, ventricular tachycardia (V-tach)

This protocol is for paramedic use only.

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

I. General Treatment
- A. Manage airway as necessary
- B. Provide supplemental O2 as needed to maintain O2 saturation > 94%
- C. Initiate monitoring and perform 12-lead EKG
- D. Establish vascular access
- E. Identify and treat underlying causes of tachycardia such as dehydration, fever, vomiting, sepsis and pain.
- F. Administer fluid bolus 20cc/kg for patients with likely fluid depletion
- G. Consider the following additional therapies if specific dysrhythmias are recognized:

II. Specific Dysrhythmia Treatment

A. **Regular Narrow Complex Tachycardia – Stable** (SVT)
- i. Perform vagal maneuvers
- ii. Administer Adenosine
  1. 0.1 mg/kg (max of 6 mg)
  2. May repeat with 0.2 mg/kg (max of 12 mg)

B. **Regular Narrow Complex Tachycardia – Unstable**
- i. Deliver a synchronized shock; 0.5-1 J/kg for the first dose
- ii. Repeat doses should be 2 J/kg

C. **Regular, Wide Complex Tachycardia – Stable**
- i. Consider Adenosine 0.1 mg/kg (max of 6 mg) for SVT with aberrancy
- ii. If ventricular in origin, give Lidocaine 1 mg/kg IV (max of 100 mg)

D. **Regular, Wide Complex Tachycardia – Unstable**
- i. Synchronized cardioversion 0.5-1.0 J/kg

E. **Unstable, Irregular, Wide Complex Tachycardia –**
- i. Defibrillate according to **Electrical Therapy Procedure**
- ii. Refer to **Pediatric General Cardiac Arrest Protocol**

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Procedures

Table of Contents

12-Lead ECG

Aliases: EKG, 12 lead

Indications:

1. A 12-lead ECG must be performed on patients exhibiting any of the following signs/symptoms:
    A. Chest pain or pressure
    B. Upper abdominal pain
    C. Syncope
    D. Shortness of breath
    E. Pain/discomfort often associated with cardiac ischemia
        a. Jaw, neck, shoulder, left arm or other presentation; 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 the following signs/symptoms should 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 may 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 Protocol.**
2. Perform 12-lead ECG per manufacturer guidelines, if available.

☑ MCA approval for EMT to obtain and transmit ECG (and notify if STEMI)

3. Report if acute MI is suspected, either by device or **paramedic** provider interpretation.
4. Promptly relay either the 12-lead findings via MCA approved communications system or transmit 12-lead to the receiving facility.
5. Agencies in cooperation with Hospitals with 12-lead ECG pre-hospital receiving capability should have the relay done electronically immediately upon completion of the ECG in the following conditions:
    A. ST elevation ≥ 1mm 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. *** **Acute MI 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, noisy positive ECG after previous negative ECG).
7. Transport patients per MCA transport protocol.

Abuse & Neglect (Suspected)

Aliases: Child abuse, elder abuse, 3200 form, mandatory reporting

Purpose: To provide the process for assessment and management for patients of suspected child abuse and elder 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 form is found here http://www.michigan.gov/documents/FIA3200_11924_7.pdf and is included in the protocol for reference.

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.

"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.

"**Exploitation"** means an action that involves the misuse of an adult's funds, property, or personal dignity by another person.

"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.

2. Indicators of Possible Abuse

- Unsolicited history 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, ecchymosis in various stages of healing
- Multiple fractures in various stages of healing
- Scald burns with demarcated immersion lines without splash marks
- Scald burns involving anterior or posterior half of extremity
- Scald burns involving buttocks or genitalia
- Cigarette burns
- 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 care-giver for information regarding the patient's medical condition. Observe mental health of care-giver.
- 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.

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, Log # _____ ▶ 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 list on page 2.

1. Date

2. List of child(ren) suspected of being abused or neglected (Attach additional sheets if necessary)

NAME	BIRTH DATE	SOCIAL SECURITY #	SEX	RACE
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)

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	

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 No.
16. Reporting person's name	Report Code (see above)	16a. Name of reporting organization (school, hospital, etc.)			
16b. Address (No. & Street)		16c. City	16d. State	16e. Zip Code	16f. Phone No.
17. Reporting person's name	Report Code (see above)	17a. Name of reporting organization (school, hospital, etc.)			
17b. Address (No. & Street)		17c. City	17d. State	17e. Zip Code	17f. Phone No.
18. Reporting person's name	Report Code (see above)	18a. Name of reporting organization (school, hospital, etc.)			
18b. Address (No. & Street)		18c. City	18d. State	18e. Zip Code	18f. Phone No.
19. Reporting person's name	Report Code (see above)	19a. Name of reporting organization (school, hospital, etc.)			
19b. Address (No. & Street)		19c. City	19d. State	19e. Zip Code	19f. Phone No.

DHS-3200 (Rev. 10-15) Previous edition may be used. 1

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 S.E.
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 – 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.

MDHHS Facility – Refers to any group home, shelter home, halfway house or institution operated by the Department of Health and Human Services. Refers to any institution or facility operated by the Department of Health and Human Services.

15.-19 - Reporting person's name - Enter the name and address of person(s) reporting this matter.

DHS-3200 (Rev. 10-15) Previous edition may be used. 2

Crime Scene Management

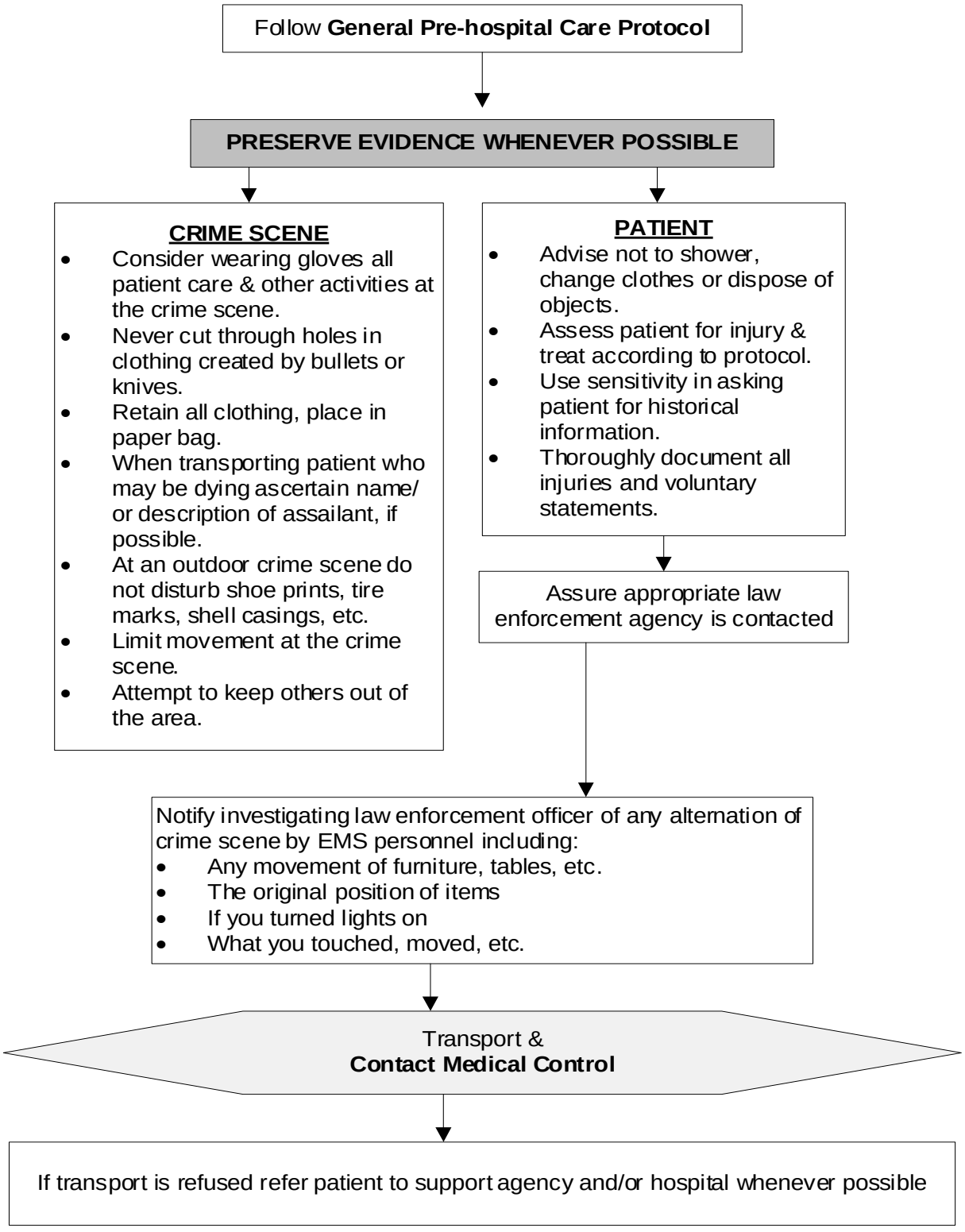
Aliases: Crime scene preservation

1. Follow **General Pre-hospital Care 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.
4. Assess patient for injury and treat according to protocol.
5. Use sensitivity in asking victim for historical information.
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

If transport is refused, refer patient to support agency and/or hospital whenever possible.

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.


Follow **General Pre-hospital Care Protocol**
PRESERVE EVIDENCE WHENEVER POSSIBLE
CRIME SCENE
Consider wearing gloves all patient care & other activities at the crime scene.
Never cut through holes in clothing created by bullets or knives.
Retain all clothing, place in paper bag.
When transporting patient who may be dying ascertain name/ or description of assailant, if possible.
At an outdoor crime scene do not disturb shoe prints, tire marks, shell casings, etc.
Limit movement at the crime scene.
Attempt to keep others out of the area.
PATIENT
Advise not to shower, change clothes or dispose of objects.
Assess patient for injury & treat according to protocol.
Use sensitivity in asking patient for historical information.
Thoroughly document all injuries and voluntary statements.
Assure appropriate law enforcement agency is contacted
Notify investigating law enforcement officer of any alternation of crime scene by EMS personnel including:
Any movement of furniture, tables, etc.
The original position of items
If you turned lights on
What you touched, moved, etc.
Transport &
Contact Medical Control
If transport is refused refer patient to support agency and/or hospital whenever possible

Contaminated Patient

1. Identification of the Contaminated Patient
    A. Use all your senses. Suspect hazardous material situation if you:
        a. **See** containers, labels or placards, or a location suggesting a hazardous substance
        b. **Hear** explosions, or reports of possible contamination, pre-arrival or on scene
        c. **Smell** unusual odors – be suspicious
2. If contamination of a patient is suspected, the local fire or public safety department must be informed of the hazardous material situation.
3. 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).
4. 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.
5. EMS responders will not enter a known contaminated area without proper personal protective equipment, training, and direction by incident command.
6. 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.
7. 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.
8. 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.

CPAP/BiPAP Administration

☑ Medical Control Authorities choosing to adopt this optional protocol may do so by selecting this check box.

Select the levels for which CPAP/BiPAP is approved

☑BLS
☑LALS
☑ALS

The CPAP portion of the protocol may be utilized by BLS/LALS/ALS agencies that have completed CPAP training, approved by the MCA, and are equipped with CPAP Equipment including pulse oximetry. BiPAP use is limited to ALS agencies that have completed BiPAP training, approved by the MCA, and are equipped with BiPAP Equipment. For use of this protocol, patients must meet the Inclusion Criteria. Contraindicated patients and those that do not meet the inclusion criteria will be treated according to existing protocols without the application of CPAP/BiPAP.

Indications:
Severe respiratory distress not responding to initial treatment with any of the following:

1. CHF/Pulmonary edema/near drowning
2. Hypoxia, i.e., SaO2 less than 92% on supplemental oxygen.
3. Acute exacerbation of asthma/COPD.

Contraindications:

1. Respiratory/cardiac arrest.
2. B/P less than 90mmHg.
3. Unresponsive to speech.
4. Inability to maintain patent airway.
5. Major trauma, pneumothorax, penetrating chest trauma.
6. Vomiting or active GI bleeding with emesis.
7. Unstable facial fractures.

Procedure

1. EXPLAIN THE PROCEDURE TO THE PATIENT.
2. Apply CPAP/BiPAP 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. Advise medical control of CPAP/BiPAP use during radio report.
7. If respiratory status deteriorates, remove the device and assist ventilations with a BVM/supplemental O2; place an appropriate airway control device.
8. Place the patient on cardiac monitor and record rhythm and vital signs.
9. Administer medications, per respiratory distress protocol, as indicated.

10. Consider sedation to reduce anxiety per **Patient Sedation Procedure.**

Removal Procedure

1. CPAP/BiPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or has marked deterioration including respiratory arrest, decreasing LOC or patient may vomit.
2. Assist ventilations as necessary

Special Notes:

1. Do not remove CPAP/BiPAP until hospital therapy is ready to be placed on the patient.
2. Watch the patient for gastric distention.
3. CPAP/BiPAP may be used on DNR patients not in arrest.
4. Due to changes in cardiac preload and afterload during CPAP/BiPAP therapy, a complete set of VS must be obtained every 10 minutes (5 minutes in short transport situations).

Dead on Scene

Aliases: DOA, DOS

I. Dead on Scene inclusion criteria:

Initiate or continue CPR for patient found to be in cardiac arrest UNLESS one or more of the following conditions exists:

A. Decomposition
B. Rigor mortis (Caution: do not confuse with stiffness due to cold environment)
C. Dependent lividity
D. Decapitation
E. Incinerated or frozen body
F. Submersion greater than 1 hour (90 minutes in cold water)
G. Gross dismemberment or obvious mortal wounds/conditions (injuries inconsistent with life – i.e., crushing injuries of the head and/or chest)
H. Unwitnessed arrest of traumatic origin, without organized electrical activity (must be asystolic or other rhythm with rate less than 40/min).
I. Patient has a valid “Do Not Resuscitate” identification bracelet or order.
J. 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.

II. Specific Exceptions

A. Patients who are struck by lightning, are hypothermic or victims of cold water drowning (unless submersion time is over 1 hour) do not qualify for use of this policy.
B. EMS personnel may initiate resuscitation efforts based upon professional judgement of viability, or if there is any concern over the validity of DNR orders, when present.

III. Procedure

A. If none of the inclusion criteria are present, continue CPR and proceed to the appropriate treatment protocol
B. If any of the above inclusion criteria, and none of the exclusion criteria, are met, cease CPR (if performed) and refer to the **Determination of Death, Death in an Ambulance and Transport of a Body Protocol.**

Do-Not-Resuscitate

Aliases: DNR

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 cardiopulmonary resuscitation. This policy is drafted in accordance with Public Act 368 of 1978, as amended, as well as Act 192 and 193 of the Public Acts of 1996. 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 Department of Community Health, 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. Order – means a do-not-resuscitate order.
   - F. 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.
   - G. 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 an individual 18 years of age or older and of sound mind **OR** by an individual 18 years of age or older and of sound mind, and adherent of a church or religious denomination whose members depend upon spiritual means through prayer alone for healing **OR** by a patient advocate of an individual 18 years of age or older.
   - A. EMS providers **shall not attempt** resuscitation of any individual who meets **ALL** of the following criteria:
     - a. 18 years of age or older
     - b. Patient has no vital signs. This means no pulse or evidence of respiration.

c. 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 from the patient. Such an order form shall be in substantially the form outlined in Annex 1 or 2 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 Annex 1 or 2, 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 Item 1 above, discontinue resuscitation.
E. A do-not-resuscitate order will not be followed if the declarant or patient advocate revokes the order. An order may be revoked at any time and in any manner by which the declarant or patient advocate 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.

3. Honor DNR, terminate resuscitation or continue resuscitation and transport to the Hospital.

Note: The forms included in this protocol are samples, and examples of what a DNR may look like and should include. A valid DNR form does not need to look like this, but must contain fundamentally these items.

"DO-NOT-RESUSCITATE ORDER"

I have discussed my health status with my physician _____. I request that in the event my heart and breathing should stop, no person shall attempt to resuscitate me.

This order is in effect until it is revoked by me.

Being of sound mind, I voluntarily execute this order, and I understand its full import.

_____ _____
(**Declarant's signature**) (Date)

_____
(Type or print declarant's full name)

_____ _____
(**Signature of person who signed for declarant, if applicable**) (Date)

_____
(Type or print full 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 individual has (has not) received an identification bracelet.

_____ _____
(**Witness signature**) (Date) (**Witness signature**) (Date)

_____ _____
(Type or print witness's name) (Type of print witness's name)

This form was prepared pursuant to, and in compliance with, The "Michigan do-not-resuscitate procedure act".

ANNEX 1

"DO-NOT-RESUSCITATE ORDER"
Adherent of Church or Religious Denomination

I request that in the event my heart and breathing should stop, no person shall attempt to resuscitate me.

This order is in effect until it is revoked by me.

Being of sound mind, I voluntarily execute this order, and I understand its full import.

_____ _____
(**Declarant's signature**) (Date)

_____
(Type or print declarant's full name)

_____ _____
(**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 individual has (has not) received an identification bracelet.

_____ _____
(**Witness signature**) (Date) (**Witness signature**) (Date)

_____ _____
(Type or print witness's name) (Type of print witness's name)

This form was prepared pursuant to, and in compliance with,
The "Michigan do-not-resuscitate procedure act".

ANNEX 2

Electrical Therapy

Aliases: AED, Cardioversion, defibrillation, pacing

Automatic External Defibrillation (AED)

The AED shall be applied only to patients found in cardiopulmonary arrest. Interruptions to CPR should be kept to a minimum. The AED should not be used on patients found lying on conductive surfaces or patients in moving vehicles. There are no age or weight limits for AED use. In pediatric patients, attenuated pads should be used, if available. If adult pads are used in pediatric patients, place in an anterior/posterior configuration.

1. Follow the **Cardiac Arrest - General Protocol (Adult or Pediatric)**.
2. Stop CPR to analyze patient and shock once, if indicated.
3. 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.
4. If no pulse, analyze the patient and repeat one shock, if indicated.
5. If patient converts to a non-shockable rhythm at any time, continue CPR until AED prompts to check the patient.
6. Should a patient who is successfully defibrillated arrest again, analyze the patient again.

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 paddles/pads according to manufacturer specifications.
   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.
3. Precautions
   A. Dry the chest-wall if wet or diaphoretic.
   B. Nitroglycerin paste should be removed; paddles should not be placed over nitroglycerin patches.
   C. Avoid placing the paddles over a pacemaker or AICD.
   D. If visible muscle contraction of the patient did not occur, defibrillation did not occur; check equipment.
   E. If pediatric pads were used with an AED prior to ALS management,

a. Either use the AED with their pediatric pads or
b. Remove the pediatric AED pads and use non-attenuated pediatric pads for defibrillation.

4. Complications
   A. Accidental shock of adjacent individual
   B. Skin burns resulting from inadequate contact between paddles and skin or due to inadequate conducting gel or dry conductive pads.

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 Sedation Procedure.**
   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. Same as for defibrillation
   B. In "sync" mode, the button(s) need to be held until a shock is delivered. If a shock is not delivered the first time, hold the button(s) again.
   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.
5. Complications
   A. Accidental shock of adjacent individual
   B. Skin burns resulting from inadequate contact between paddles and skin or due to inadequate conducting gel or dry conductive pads.

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 Sedation 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 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. Precautions
    A. Use of transcutaneous pacemakers can cause painful muscle contractions. Consider the use of sedation in patients that are awake. See **Patient Sedation Protocol.**
4. Contraindications
    A. Wet environment
    B. Burns to the chest (relative)

Special Considerations for Electrical Therapy:

1. Electrical therapy may not be successful in hypothermic patients; refer to **Hypothermia Cardiac Arrest Protocol.**

Emergency Airway

***Alias**: Airway Management, Airway Intervention, Supraglottic Airway, Intubation, Cricothyroidotomy.*

Effective airway management and ventilation are important lifesaving interventions that all EMS providers must be able to perform. The approach to airway management should generally proceed in a stepwise fashion, from basic to advanced, since basic maneuvers can sustain life until an advanced airway can be established. Providers should use clinical judgment in conjunction with medical direction to determine which interventions are most appropriate for a particular patient.

Indications for Airway Management and Ventilation

1. Airway Management
    a. Airway obstruction
    b. Need for positive pressure ventilation (see below)
    c. Airway protection, such as an unconscious patient without a gag reflex.
    d. Trauma patient with a Glasgow Coma Score of 8 or less.
2. Positive Pressure Ventilation
    a. Respiratory or cardiac arrest (including agonal respirations)
    b. Respiratory failure (inadequate respiratory rate/volume)

Contraindications for Airway Management and Ventilation

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.

MANAGEMENT OVERVIEW

1. In cases of foreign body airway obstruction, refer to Foreign Body Airway Obstruction section of this protocol.
2. CPAP (when available) should be considered for patients with severe respiratory distress that do not improve with supplemental oxygen administration in accordance with the **CPAP/BiPAP Administration Procedure**.
3. 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.
4. 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.
5. In unconscious patients without a gag reflex, insert a properly sized oropharyngeal airway. Immediately remove upon return of gag reflex.
6. In unconscious patients with gag reflex, consider insertion of a properly sized nasopharyngeal airway, using water-soluble lubrication when available.
7. In patients requiring bag-valve-mask ventilations, consider inserting both oral and nasopharyngeal airways to optimize ventilations.
8. 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.

9. 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
10. A pocket mask or face shield is an acceptable alternative for single rescuer ventilations.
11. When caring for patients with stomas, use pediatric masks to achieve seal.
12. For patients with a tracheostomy tube and home ventilator connect BVM (without mask) directly to tracheostomy tube and ventilate at appropriate rates.
13. In the adult patient, providers may consider continuing basic airway management techniques if the airway is able to be maintained adequately.
14. In the pediatric patient (14 or under), providers **must** continue basic airway management, unless the airway is unable to be adequately maintained.
15. MCA-approved supraglottic airways (e.g., Combitube®, King Laryngeal Tracheal Tube or i-gel®) may be used to secure the airways in unconscious patients that do not have a gag reflex.

MCA Approved Supraglottic Airways

☑ **Combitube ®** ☑ **King Laryngeal Tracheal Tube ®** ☑ **i-gel ®**

    a. **i-gel® is the only supraglottic airway for MFR use. It does not require cuff inflation and can be used by MFR if approved by the MCA and adopted by the agency.**

MCA Approval for MFR use of i-gel ®
(Agency Optional)
☑ **Yes** ☐ **No**

16. In cardiac arrest patients, although endotracheal intubation has been considered the gold standard, supraglottic airways are considered equivalent to endotracheal intubation and are appropriate as a first-line advanced airway and should be used early when endotracheal intubation cannot be readily performed without interrupting chest compressions. Use of supraglottic airways in cardiac arrest patients may allow for earlier transition to continuous chest compressions.
17. Each MCA must select at least one state-authorized supraglottic airway for use in their system.
18. Supraglottic airways should be placed in accordance with manufacturer's instructions for use (see appropriate procedure) and must be confirmed by positive end-tidal CO_2 levels by waveform capnography (preferred) or by use of colorimetric qualitative end-tidal CO_2 detectors and by auscultation for absence of gastric sounds and presence of bilateral lung sounds. Additional clinical findings consistent with a properly placed airway include chest expansion, improvement in patient's color, and improvement in pulse oximetry (when available).
19. Supraglottic airway placement should be re-confirmed at frequent intervals throughout the care of the patient, particularly after each patient movement.

Table 1 Airway Procedures

PROCEDURE	MFR	EMT	EMT-A (Specialist)	PARAMEDIC
Oropharyngeal Airway	X	X	X	X
Nasopharyngeal Airway	X	X	X	X
Bag-Valve-Mask Ventilation	X	X	X	X
Supraglottic Airway (Individual Agency approval per MCA)	O/SR	X	X	X
Oral Endotracheal Intubation				X
Needle / Surgical Cricothyroidotomy				O/O
X: Approved Intervention ***O: Optional Intervention per MCA selection*** ***SR: Special Requirements =additional education, monitoring and reporting.***				

** This table indicates the type of airway procedures allowed per level of licensure. Based on jurisdictional need, the MCA may approve the use of the* i-gel® *supraglottic airway by MFRs. If an MCA opts to allow MFRs in a particular agency to utilize the* i-gel® *airway, special requirements must be enacted by the MCA including competency assessment, on-going training for MFRs, and PSRO review of every case in which an MFR utilizes a supraglottic airway.*

20. Orotracheal intubation under direct laryngoscopy may be performed in adult patients who are unable to protect their own airway (e.g., no gag reflex), require sustained positive pressure ventilation, and/or are in cardiac arrest.
21. Orotracheal intubation under direct laryngoscopy may be performed in pediatric patients (14 years old and under) who are unable to protect their own airway (e.g., no gag reflex), require sustained positive pressure ventilation, and/or are in cardiac arrest ONLY when basic airway management techniques (e.g., 2-person mask ventilation with oropharyngeal airway) are ineffective. Per MCA selection, may be pre or post-radio.

MCA Selection
Pediatric Intubation
☐ **Pre-Radio** ☑ **Post-Radio**

22. Deep tracheal suctioning may be performed when indicated using sterile technique and suctioning only during withdrawal of catheter.
    a. Maximum suction time:
        i. Adults (>14 years old): maximum 10 seconds
        ii. Children (1 to 14 years old): maximum 10 seconds
        iii. Infants (< 1 year old) maximum 5 seconds

23. When approved by local MCA, needle and/or surgical cricothyroidotomy may be performed when airway compromise from injury is present that prevents ventilation with basic techniques and makes intubation impractical in a patient who needs immediate airway management. In cases of complete airway obstruction that cannot be corrected, and in situations when other basic and advanced airway management techniques are unsuccessful in achieving effective ventilation.

☑ **MCA approval of Needle Cricothyroidotomy by Paramedics**
☐ **MCA approval of Surgical Cricothyroidotomy by Paramedics**
☐ **MCA Commercial Percutaneous Cricothyroidotomy by Paramedics**

24. Use of sedation to facilitate advanced airway placement is contraindicated. Sedation for tube tolerance following successful tube placement is indicated in accordance with the **Patient Sedation Procedure.**

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
3. For conscious infants (under 1 year old) with evidence of severe FBAO:
    a. Deliver repeated cycles of 5 back blows (slaps) 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:
    a. Start CPR with chest compressions (do not perform a pulse check).
    b. After 30 chest compressions, open the airway and visually inspect the mouth for a foreign body, remove it but do not perform blind finger sweeps as this may push obstructing objects farther into the pharynx and may damage the oropharynx.
    c. Attempt to give 2 breaths and continue with cycles of chest compressions and ventilations until the object is expelled.
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, consider brief trial of abdominal thrusts while performing direct laryngoscopy.
7. Once FB is removed, if spontaneous respiration does not return, perform endotracheal intubation if able to be readily accomplished or place Supraglottic airway and begin ventilations.

SPECIFIC AIRWAY PROCEDURES

i-gel® Supraglottic Airway

MFR approved only if approved by the MCA, adopted by the agency, and personnel are trained

Table 2 i-gel® Supraglottic Airway Required Documentation

Size of i-gel® used	Time of attempt(s)
Number of attempts	Suctioning required before placement
Ventilation compliance	Chest rise with ventilation
Capnography Used	ET CO_2/Capnography reading (serial)
Equality of lung sounds	Absence of epigastric sounds
Method for securing airway	Any complications with procedure
Gastric decompression performed (excluding MFRs)	

Indications:

1. Cardiac arrest. Appropriate as first-line advanced airway.
2. Respiratory arrest (including agonal breathing), without gag reflex, not responsive to initial treatment including bag-valve-mask ventilation and naloxone (when indicated)
3. Rescue airway for failed endotracheal intubation (Paramedics only).

Contraindications:

1. Responsive patients with a gag reflex.
2. Trismus (limited mouth opening), suspected pharyngo/peri-laryngeal abscess, major facial trauma or oral-pharyngeal mass.
3. Patients in whom caustic substance ingestion is suspected.

Equipment:

1. i-gel® O_2 Resus Pack (includes airway, support strap, water-soluble lubricant)
2. Supplies: bag-valve-mask, capnography, suction
3. Use appropriate size for patient based on table below.

Table 3 i-gel® Quick Reference

Size	Color	Patient Size	Patient Weight
3	Yellow	Small adult	30-60 kg (~65-130 pounds)
4	Green	Medium adult	50-90 kg (~110-200 pounds)
5	Orange	Large adult	90+ kg (More than 200 pounds)

Source: http://www.intersurgical.com/info/igel

Note: Patients with cylindrical necks or wide thyroid/cricoid cartilages may require a larger size i-gel® than would normally be recommended on a weight basis. Equally, patients with a broad or stocky neck or smaller thyroid/cricoid cartilage, may require a smaller size i-gel® than would normally be recommended on a weight basis. Patients with central obesity, where the main weight distribution is around the abdomen and hips, might in practice require an i-gel® of a size commensurate with the ideal body weight for their height rather than their actual body weight.

i-gel® O_2 Pre-Insertion:

1. Provide bag-valve mask ventilation using 2 person technique with an oropharyngeal airway, avoiding hyperventilation, and performing pharyngeal suctioning as needed.
2. Inspect the packaging and ensure it is not damaged prior to opening.

3. Inspect the device carefully, check that the airway is patent and confirm that there are no foreign bodies or a bolus of lubricant obstructing the distal opening of the airway or gastric channel.
4. Remove the i-gel® O_2, open the sachet of supplied lubricant and place a small bolus of the lubricant on the base of the inner side of the main shell of the packaging.
5. Grasp the i-gel® O_2 along the integral bite block and lubricate the back, sides and front of the cuff with a thin layer of lubricant. This process may be repeated if lubrication is not adequate. After lubrication has been completed, check that no bolus of lubricant remains in the bowl of the cuff or elsewhere on the device. Avoid touching the cuff of the device with your hands.
6. Ensure the supplementary oxygen port is firmly closed with the integral cap in place.
7. Position the patient's head (ideal position is the sniffing position, but the neutral position can be used especially for suspected spinal injury).
8. Pre-position the airway support strap behind the patient's neck.

i-gel® O_2 Procedure:

9. Grasp the lubricated i-gel® O_2 firmly along the integral bite block. Position the device so that the i-gel® O_2 cuff outlet is facing towards the chin of the patient.
10. Introduce the leading soft tip into the mouth of the patient in a direction towards the hard palate.
11. Glide the device downwards and backwards along the hard palate with a continuous but gentle push until definitive resistance is felt.
12. At this point, the tip of the device should be located in the upper esophageal opening and the cuff should be located against the laryngeal framework. The incisors should be resting on the integral bite block.
13. i-gel® O_2 should be secured with the airway support strap provided.
14. Attach bag-valve device and verify placement by ALL of the following criteria:
    a. Positive end-tidal CO2 levels by waveform capnography (preferred) or by use of colorimetric qualitative end-tidal CO2
    b. Rise and fall of the chest
    c. Bilateral breath sounds and absent epigastric sounds
15. If there is any question about the proper placement of the i-gel® O_2 airway, remove the airway, ventilate the patient with BVM and OPA for at least 30 seconds and repeat insertion procedure (maximum of 3 attempts), considering different size.
16. If unsuccessful, return to BVM ventilation and consider alternative advanced airway as authorized by MCA.
17. If successful, continue positive pressure ventilation, avoiding hyperventilation.
18. Consider reinforcing the airway support strap with tape for transport.
19. Continue to monitor the patient for proper airway placement throughout prehospital treatment and transport using waveform capnography.
20. Following successful placement, consider gastric decompression (excluding MFR) using a lubricated 10F (#3 or 4 i-gel) or 12F (#5 i-gel) oral gastric tube, if available.

Combitube® Airway

Table 4 Combitube® Airway Required Documentation

Size and type of Combitube® Airway	Time(s) attempted
Number of attempts	Suction required
Ventilation compliance	Chest rise with ventilation
Absence of epigastric sounds	Which tube used for ventilation
Capnography used	ET CO_2 capnography reading
Equality of lung sounds	Any complications with intubation procedure

Indications:
For use in unconscious patients with absent gag reflex, that require assisted ventilation. May be used as a rescue device for failed endotracheal intubation or as a primary advanced airway technique. May be preferred over ET intubation in cardiac arrest patients to minimize interruptions in chest compressions.

Contraindications:
1. Patient with an intact gag reflex
2. Patient under 5 feet tall for a regular adult, 4 feet for Combitube® SA
3. Patients in whom caustic substance ingestion is suspected
4. Presence of a tracheostomy

Equipment:
1. Combitube® is available in 2 sizes, 41F and 37F (SA)
2. Support equipment: Bag-valve-mask, suction, capnography, securing device
3. Use appropriate size and inflation volumes for patient based on table below

Table 5 Combitube® Quick Reference

Patient Height	Combitube® size	Proximal Balloon #1 Inflation Volume	Distal balloon #2 Inflation Volume
>4 Feet Tall	Combitube® SA 37f	50-75 cc (85 cc max)	12cc
>5 Feet Tall	Combitube® 41f	50- 75 cc initially (100cc max)	15cc

Note: In most patients under 6' the Combitube® SA (37F) is preferred.

Procedure for Combitube® Airway Insertion
1. Provide bag-valve-mask ventilation using 2-person technique with an oropharyngeal airway, avoiding hyperventilation, and performing pharyngeal suctioning as needed.
2. Test cuff inflation system by injecting the maximum inflation volume listed in table above for the size of the tube.
3. Deflate cuffs completely before insertion, leaving syringe attached to connector.
4. Lubricate tip of Combitube® with water soluble medical lubricant.

5. Position patient with head/neck in a neutral position (or slightly flexed if no suspected spinal injury).
6. With gloved hand, lift mandible (jaw) forward.
   a. Alternatively, may use a curved laryngoscope blade to establish path for insertion.
   b. Insert Combitube® into mouth following the same curvature as the pharynx.
7. Gently advance Combitube® (along midline) deep into the pharynx until the patient's teeth (gums) lie between the two circular ring markings on the outer end of the airway.
   a. If resistance is felt while advancing, assure the mandible is fully displaced forward.
   b. Do not forcibly advance the airway against resistance.
   c. If resistance continues to be felt, withdraw the Combitube® and reinsert.
8. Without holding the Combitube®, inflate the Blue Port #1 (proximal pharyngeal balloon) with 50-75 cc of air using the large syringe. Combitube® may be slightly displaced outward.
9. Inflate the White Port #2 (distal esophageal balloon) with 12 cc of air (Combitube® SA 37 F) or 15 cc of air (Combitube® 41 F) using the small syringe.
10. Attach the bag-valve ventilator to the Blue Tube (#1) and begin ventilations while assessing for placement.
    a. Confirm positive end-tidal CO2 levels by waveform capnography (preferred) or by use of colorimetric qualitative end-tidal CO2. Assess for chest rise, listen for absence of gastric (stomach sounds), then listen for bilateral breath sounds.
    b. If chest rises, no gastric sounds and bilateral breath sounds are present and CO_2 detected, continue ventilating through Blue Tube #1. Tube should be in esophagus.
    c. If chest does not rise and if gastric sounds are present when ventilating through Blue Tube #1, immediately switch to Clear Tube #2. If chest rises, no gastric sounds and bilateral breath sounds are present and CO_2 detected, continue ventilations through Clear Tube #2. Tube should be in trachea.
    d. If ventilation through either tube does not produce chest rise, absent gastric sounds, bilateral breath sounds and detection of CO_2, then immediately fully deflate balloon #1 then balloon #2 and remove Combitube®, reinsert oropharyngeal airway and resume 2-person bag-valve mask ventilations prior to re-attempting procedure.
11. If ventilations are successful through Blue Tube #1 but an air leak is detected at the mouth, place additional air into Blue Port #1 in 10 cc increments while ventilating (85 cc maximum for 37 F or 100 cc maximum for 41 F) until air leak resolves.
12. If ventilating successfully through Blue Tube #1 and gastric distension is present, insert suction catheter (provided) through Clear Tube #2, attach suction and decompress stomach, if available.
13. The large pharyngeal balloon generally is sufficient to keep the Combitube® in place during pre-hospital care. Additionally securing the Combitube® with tape or similar means is recommended when extensive patient movement is likely to occur (e.g., during extrication).
14. Constant monitoring of the patency of the airway must be done throughout the care of the patient. End tidal CO_2 monitoring, evaluating chest rise and re-auscultation of gastric and breath sounds should be performed at frequent intervals.
15. Both the pharyngeal and esophageal balloons are at risk for being punctured during insertion from sharp teeth. If either balloon is punctured the device will not work effectively and must be removed. This can be detected by the pilot cuffs being unable to maintain air.
16. Combitube® should be removed if patient develops a gag reflex. Alternatively, paramedics may sedate as needed for tube tolerance per **Patient Sedation Procedure**.

King LTS-D® Supraglottic Airway

Table 6 King ® Supraglottic Airway Required Documentation

Size and type of King ® airway used	Time(s) attempted
Number of attempts	Suctioning required before placement
Ventilation compliance	Chest rise with ventilation
Equality of Lung Sounds	Absence of Epigastric Sounds
Capnography used	ET CO_2 capnography reading
Method for Securing Airway	Any Complications with Intubation Procedure
Gastric decompression performed	

Indications:
For use in unconscious patients without gag reflex, that require ventilation. May be used as a rescue device for failed endotracheal intubation or as a primary advanced airway technique. Consider in cardiac arrest patients to minimize interruptions in compressions.

Contraindications:
1. Responsive patients with a gag reflex
2. Patients who are under 4 feet
3. Patients in whom caustic substance ingestion is suspected.

Equipment:
1. King LT-D ®: Disposable King Airway that does not have gastric access.
2. King LTS-D ®: Disposable King Airway that provides gastric access to allow for gastric decompression using an 18F gastric tube (preferred for adults).
3. Supplies: Water-soluble lubricant, bag-valve-mask, capnography, securing device.
4. Use appropriate size and inflation volumes for patient based on table below.

Table 7 King Airway ® Quick Reference

Size	Patient Criteria	Connector Color	Inflation Volume LT-D	Inflation Volume LTS-D
3	4-5 ft.	Yellow	45-60 ml	40-55 ml
4	5-6 ft.	Red	60-80 ml	50-70 ml
5	Greater than 6 ft.	Purple	70-90 ml	60-80 ml

Source: **https://www.narescue.com/media/custom/upload/File-1443546141.pdf**

King LTS-D ® Procedure:
1. Provide bag-valve-mask ventilation using 2-person technique with an oropharyngeal airway, avoiding hyperventilation, and performing pharyngeal suctioning as needed.
2. Test cuff inflation system by injecting the maximum inflation volume listed in table above for the size of the tube.
3. Deflate cuffs completely before insertion, leaving syringe attached to connector.

4. Lubricate the beveled distal tip and posterior aspect of the tube avoiding introduction of lubricant in or near the ventilatory openings.
5. Position the patient's head (ideal position is the sniffing position but the neutral position can be used).
6. Holding the King ® at the connector, hold the patient's mouth open and apply chin lift unless contraindicated due to trauma and/or spinal immobilization,
7. With the King ® rotated laterally 45-90 degrees, such that the blue orientation line is touching the corner of the mouth, introduce tip into the mouth and advance behind the base of the tongue. Never force the tube into position.
8. As the tip passes under tongue rotate tube back to midline (blue orientation line faces chin).
9. Without exerting excessive force, advance the King ® until base of connector aligns with teeth or gums.
10. Inflate the cuff based on the listed volumes for the tube size used.
11. Attempt ventilation. If resistance is met and/or no chest rise occurs, carefully withdraw the airway approximately 1 cm at a time while attempting to ventilate. When airway is in supraglottic position, patient should easily ventilate and chest should rise and fall.
12. Attach bag, valve device and verify placement by ALL of the following criteria:
    a. Positive end-tidal CO2 levels by waveform capnography (preferred) or by use of colorimetric qualitative end-tidal CO2.
    b. Rise and fall of chest
    c. Bilateral breath sounds
    d. Absent epigastric sounds
13. Secure the airway, preferably with a commercial tube holding device appropriate for the King Airway ®.
14. If there is any question about the proper placement of the King Airway ®, deflate the cuffs and remove the airway, Ventilate the patient with BVM for 30 seconds and repeat insertion procedure or consider other airway management options.
15. Continue to monitor the patient for proper airway placement throughout prehospital treatment and transport.
16. Following successful placement, consider gastric decompression using a lubricated 18F gastric tube, if available.
17. King Airway® should be removed if patient develops a gag reflex. Alternatively, paramedics may sedate as needed for tube tolerance per **Sedation Procedure**.

Orotracheal Intubation

Pediatric Orotracheal Intubation should not be performed unless unable to ventilate by any other means (including BVM and basic airway adjuncts).

Table 8 Orotracheal Intubation Required Documentation

ET tube size	Number of attempts
Visualization of vocal chords	Suction required
ET Tube measurement (cm) at teeth	Chest rise with ventilation
Ventilation compliance	Bulb syringe check documented if used
Capnography used	ET CO_2 capnography reading
Equality of lung sounds	Absence of epigastric sounds
Method for securing ET tube	Any complications encountered

1. Ventilate the patient with 100% oxygen using BVM and 2-person technique.
2. Gather equipment:
    a. Appropriate size ETT with stylet
    b. Syringe
    c. Laryngoscope with blades
    d. Suction
    e. Bag-valve-mask (BVM)
    f. Commercial device for securing tube after placement
    g. Waveform capnography (preferred) or colorimetric capnometry for confirmation
    h. Pulse oximeter, if available
3. If no suspicion of cervical spine injury, position patient with head elevated and extended.
4. If cervical spine injury suspected, have 2nd person stabilize head and neck in neutral position.
5. Perform direct laryngoscopy:
    a. If using a curved blade, place the tip anterior to the epiglottis into the vallecula.
    b. If using a straight blade, directly lift the epiglottis with the tip of the blade.
    c. For infants and children less than 4-6 years old, a straight blade is recommended.
    d. For commercial video laryngoscopy systems (approved by MCA and the Division), follow manufacturer's instructions for use regarding placement.
6. In the adult patient the ET tube should be advanced through the cords until the proximal portion of the balloon is passed 2 to 3 cm beyond the vocal cords. Unless otherwise contradicted by auscultation, the tube should be 21 cm at the incisors (or corner of the mouth) in females and 23 cm in males.
7. In pediatric patients, the ET tube should be advanced to the depth recommended based on patient's weight. In general the ET tube should be advanced to a depth that is approximately 3 times the size of the ET tube (e.g., a 4.0 tube should be advanced to ~12 cm).
8. In general, attempts should be limited to less than 30 seconds each.
9. No more than two attempts should be may be made prior to considering a Supraglottic airway and/or continuing with basic airway management techniques.
10. In cardiac arrest patients, limit interruptions of compressions to no more than 10 seconds.
11. If using a cuffed tube, inflate the balloon.

12. Confirm tube placement with positive end-tidal CO2 levels by waveform capnography (preferred) or by use of colorimetric qualitative end-tidal CO2, by absence of gastric sounds and by presence of bilateral breath.
13. Document the procedure including all the above confirmation techniques for each oral intubation attempt. Maintain airway monitoring once established.
    a. For documentation purposes an oral attempt is defined as anytime an ET tube passes patient's lips.
14. Airway placement should be re-confirmed at frequent intervals throughout the care of the patient, particularly after each patient movement.

Cricothyroidotomy

NOTE: If MCA selects Commercial Percutaneous Cricothyroidotomy; training program must be submitted with this protocol.

Table 9 Cricothyroidotomy Required Documentation

Type of cricothyroidotomy attempted	Indication for cricothyroidotomy
Number of attempts	Times attempted
Ventilation compliance	Previous advanced airway attempts
ET CO_2 Capnography reading	Chest rise with ventilation
Equality of lung sounds	Post cricothyroidotomy pulse oximetry
Any complications with procedure	

The cricothyroid membrane is located subcutaneously between the thyroid cartilage ("Adam's apple") and cricoid cartilage. There are three methods for performing a cricothyroidotomy: surgical cricothyroidotomy, needle cricothyroidotomy, and percutaneous cricothyroidotomy using a state and local MCA-authorized commercial kit. The surgical technique uses a scalpel blade to create an opening in the cricothyroid membrane through which an endotracheal tube is inserted. The needle technique uses a large bore (> 14 ga) IV catheter inserted percutaneously and requires a commercial transtracheal jet insufflation device for optimal use. The percutaneous cricothyroidotomy uses a commercial kit to perform the cricothyroidotomy.

Patients less than age 8 may have a needle cricothyroidotomy performed or a percutaneous cricothyroidotomy using an approved pediatric kit. Patient's age 15 or greater may undergo a needle, surgical, or commercial percutaneous cricothyroidotomy, **as approved by local medical control**.

Indications for Cricothyroidotomy:

1. Total airway obstruction not relieved by other methods.
2. Airway compromise from injuries that prevent ventilation with basic techniques and makes intubation impractical in a patient who needs immediate airway management.
3. Inability to intubate or effectively manage with basic ventilation techniques or supraglottic airway.

Contraindications for Cricothyroidotomy:

1. Ability to ventilate by any other method.

Technique for Surgical Cricothyroidotomy:

1. Gather necessary equipment in addition to that needed for oral intubation:
    a. Antiseptic solution
    b. Scalpel
    c. Tracheal hook (recommended)
    d. Gum elastic bougie (recommended)
2. Identify cricothyroid membrane.
3. Prep the site with antiseptic solution.
4. While stabilizing the larynx with one hand, use the opposite hand to make a 3 cm vertical incision through the skin in the midline over the cricoid membrane.
5. After identification of the cricoid membrane, use the scalpel to make a ~1 cm horizontal incision through the lower portion of the membrane.
6. Enlarge the hole and advance the ET tube into the airway, and inflate the balloon.
    a. Care should be taken to assure tube is inserted into the trachea and not a `false passage.
    b. When available, use a tracheal hook to displace the inferior aspect of the membrane anteriorly so as to facilitate tube placement.
    c. When available, insert a gum elastic bougie through the incised membrane and advance until resistance is felt at the level of the carina. Then advance the ET tube over the bougie (recommended technique).
7. Verify correct placement using usual techniques, including end tidal CO_2 detection.
8. Maintain continuous CO_2 monitoring once established.
9. Apply dressing to area.

Technique for Needle Cricothyroidotomy:

1. Gather necessary equipment:
    a. Antiseptic solution
    b. Transtracheal jet insufflation device 50 psi (required for adults)
    c. For pediatric patients under 5 y/o use a ventilation system using a 3 mm ET tube adapter connected directly to the catheter Luer lock and to bag-valve device. This system provides only temporary limited oxygenation.
    d. IV catheter (≥ 14 gauge) and syringe (5-10 cc). Do not use needle safety catheters that do not allow for connection of a syringe.
2. Identify cricothyroid membrane.
3. Prep the site with antiseptic solution.
4. Connect the IV catheter to a syringe.
5. Stabilize the larynx and re-identify the cricothyroid membrane.
6. Direct the IV catheter posteriorly and inferiorly at an angle of ~45 degrees to the skin.
7. Insert the IV catheter through the skin, maintaining negative pressure on the syringe. Entry of air and loss of resistance signifies entry into the larynx.
8. Advance the catheter into the larynx and retract the needle.
9. Caution must be used to ensure the catheter does not bend.
10. Ventilate using a commercial transtracheal jet insufflation device, as indicated.
11. Deliver 100% O_2 at 20 bursts/minute with Inspiratory/Expiratory of 1:2.

Technique for Percutaneous Cricothyroidotomy Using Approved Commercial Kit:
Note: Only state and local MCA approved commercial percutaneous cricothyroidotomy kits may be used.

1. Prepare necessary equipment.
2. Follow Instructions for use provided by device manufacturer.

Nasal Intubation Procedure

This protocol is only to be utilized by paramedics within an adopting MCA.

Indication: Spontaneously breathing adult patient with a gag reflex in need of advanced airway.

Documentation Points

✓ Size of ET tube	✓ Specific indication(s) for NT intubation
✓ Number of attempts	✓ Suction required
✓ ET Tube measurement (cm) at nare	✓ Chest rise with ventilation
✓ Ventilation compliance	✓ Color-metric End-tidal CO2
✓ Capnography used	✓ ETCO2/Capnography reading
✓ Equality of lung sounds	✓ Absence of epigastric sounds
✓ Method for securing ET tube	✓ Any complications with intubation procedure

Contraindications:

1. Patients without spontaneous respiratory effort.
2. Patients with mid-face and nasal trauma.
3. Relative contraindication - known bleeding disorder.
4. Patients that are candidates for CPAP, if available, and not already attempted.

Technique for Nasotracheal Intubation:

1. Ventilate patient with 100% oxygen.
2. Gather equipment: Same as for orotracheal intubation except:
    A. Stylet is not used
    B. Water soluble lubricant needed, preferably lidocaine jelly
3. Liberally lubricate nares and the distal portion of the tube. If available, lidocaine jelly on a nasal pharyngeal airway should be used.
4. Secure the tube connector to the tube with firm pressure prior to beginning procedure.
5. Insert ET tube into nares with the bevel against the septum.
6. Advance the tube posteriorly with gentle pressure. If resistance is encountered may attempt gentle back and forth rotation of tube while advancing.
7. As tube is advanced into nasopharynx, listen for airflow through the ET tube. Advance the tube until airflow appears loudest. If using tip-controlled ET tube, direct tube tip anteriorly.
8. In synch with inhalation rapidly advance tube until airflow is clearly heard through tube.
9. Advance tube until the adapter is approximately 1 cm from nares.
10. Inflate balloon, attach ventilation device, and confirm as for orotracheal intubation. Right main stem intubation is uncommon. If chest rise is limited to right side, carefully withdraw tube (with balloon deflated) until breath sounds become equal.
11. Secure tube and reassess tube placement at frequent intervals.

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

Injured Athlete & Helmet Removal

Treatment of the injured athlete with protective gear presents unique challenges that are best considered prior to the event if possible. Whether responding to a request after an injury or responding as a stand by resource, an emergency action plan that has been discussed prior to the event may provide organized consistent treatment for the athlete.

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.

Impedance Threshold Device (ITD) (Optional)

☐ 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.

Indications:

1. Cardiopulmonary arrest (medical etiology)

Contraindications:

1. Cardiopulmonary arrest related to trauma

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 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. Secure the tube.
   C. Move the ITD from the facemask to the advanced airway and turn on timing assist lights (remove clear tab).
   D. Continue CPR with minimal interruptions:
      a. Provide continuous (no pauses) chest compressions and ventilate asynchronously over 1 second when light flashes
   E. Perform ACLS interventions as appropriate.
   F. If a pulse is obtained, remove the ITD and assist ventilations as needed.

Special Notes:

1. Always place $ETCO_2$ 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.

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)
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 ≥94%.
3. Patients with COPD may develop a hypoxic drive to breath. 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 **Emergency Airway Procedure.**
2. In spontaneously breathing patients administer supplemental oxygen by appropriate means.
    A. Nasal cannula at 2-6 LPM (decrease for pediatric patients): 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 8-12 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).
3. In patients not breathing or breathing below their normal respiratory rate use a bag-valve-mask to provide ventilations with oxygen connected at 15 LPM (decrease in pediatric patients to assure reservoir bag inflated). See **Emergency Airway Procedure.**
4. 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).
5. When caring for patients with stomas, use pediatric size masks.

Pain Management

Aliases: Analgesia, pain control, acute pain

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

The goal is to reduce the level of pain for patients in the pre-hospital setting, not to eliminate all of the patient's pain.

All pain should be assessed and scored according to the "Wong Pain Scale". Reassessment should be timed according to medication onset of action, changes in patient condition, patient positioning and other treatments.

Note: Medical Control contact is required for patients with labor pains, dental pain, established care plans that deter pain management, and patients with chronic pain who do not have a palliative care plan.

1. Place the patient in the position of comfort.
2. Verbally reassure the patient to control anxiety.
3. If not improved with BLS intervention, consider analgesia.
4. Start an IV NS KVO. If the patient's systolic blood pressure is clinically hypotensive, and signs of hypoperfusion, administer an IV/IO fluid bolus. Refer to **Vascular Access & IV Fluid Therapy Procedure**.
5. Per MCA selection, for mild to moderate pain (described as 1-4 on the Wong Pain Scale), consider non-opioid analgesia.

MCA Selected Non-Opioid Analgesia

☒ Acetaminophen 15 mg/kg PO (max dose 1 gm)
Pediatrics, see dosing chart

☒ Ibuprofen 10 mg/kg PO (Not appropriate for patients < 6 months or pregnant, maximum dose 600 mg)
Pediatrics, see dosing chart

☒ Ketorolac (Toradol ®)
Adult 15 mg IM/IV (not appropriate for pregnancy)
Pediatric 1 mg/kg IM/IV (max dose 15 mg)

6. For patients with moderate to severe pain (described on the Wong Pain Scale), consider Ketamine.
    a. Adults (or > 80 lbs.)
        i. 0.2 mg/kg IV/IO diluted in 100 mL NS IV bag and administered over at least two minutes, or 0.5 mg/kg IN (if available).
        ii. Maximum single dose 25 mg
        iii. May repeat after 10 minutes to a maximum dose of 50 mg

iv. For patients over 65, contact medical control prior to Ketamine administration, consider the use of Fentanyl.

b. Pediatrics (or < 80 lbs.)
   i. Consider the use of Fentanyl
      1. 1mcg/kg, based on Mi-Medic Card dosing.
      2. Single dose up to 40 mcg, may repeat up to a total dose of 80 mcg.

7. When administering analgesic medications, patients may experience nausea as a side effect. Consider Ondansetron.
   a. Adults: 4 mg IV/IO or ODT

   b. Pediatrics: 0.1 mg/kg IV/IO (max dose 4 mg)
   c. May repeat one time for continued nausea.
8. If a patient is unable to tolerate Ketamine or has severe pain (described as on the Wong Pain Scale), opioid analgesia may be administered. Patients should receive only one opioid medication.

MCA Selected Opioid Analgesia

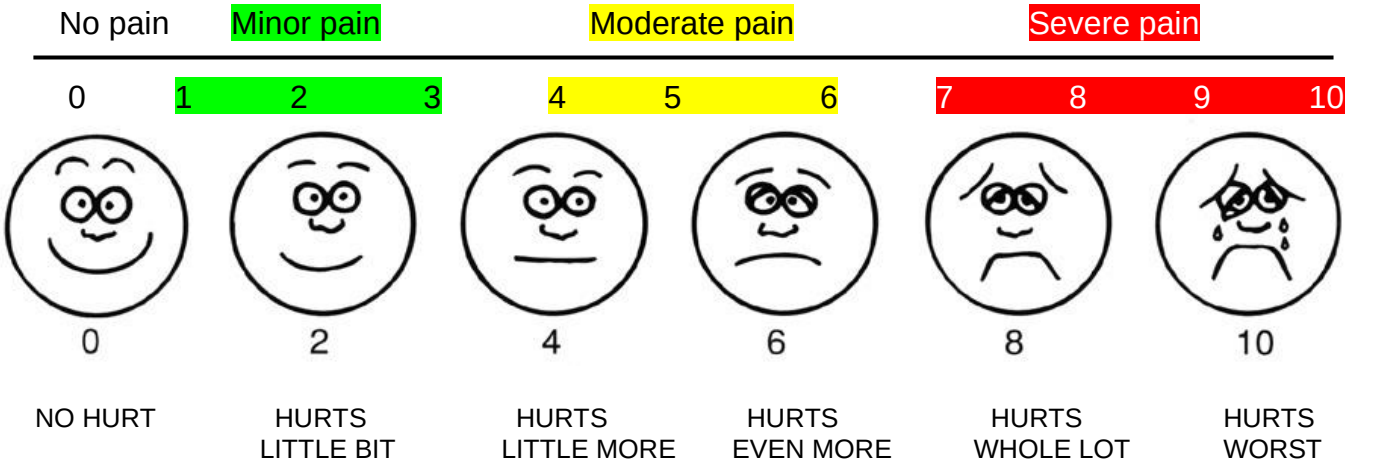
☐ Morphine 0.1 mg/kg IV/IO (maximum single dose 10 mg) may repeat one time. Total dose may not exceed 20 mg.

☒ Fentanyl 1 mcg/kg IV/IO (IN, if available) Maximum single dose 100 mcg, may repeat one time. Total dose may not exceed 200 mcg.

☐ Hydromorphone 0.5 mg IV/IO (for extended transports), may repeat every 10 minutes, for a maximum dose of 2 mg.

9. For patients with refractory pain after Ketamine administration, contact medical control for additional pain medication.
10. Administer opioids slowly when using IV or IO routes (Intranasal per MCA selection). Systolic BP should be maintained at > 100 mm Hg for adult patients and > 80 + (2 x age) mm Hg for pediatric patients.
11. For patients with evidence of hypotension or hypoperfusion, contact medical control.

Wong Pain Scale: Pain Assessment Scale
Choose a number from 1 to 10 that best describes your pain



Feeling perfectly normal

Nagging, annoying, but doesn't interfere with most daily living activities.

Interferes significantly with daily living activities. Requires lifestyle changes but patient remains independent. Patient unable to adapt to pain.

Disabling, unable to perform living activities. Unable to engage in normal activities. Patient is disabled and unable to function independently.

Dosing Table

Child's Weight (AGE)	Children's Acetaminophen Elixir (160 mg/5ml)	Children's Ibuprofen Elixir (100 mg/5 ml)
6-12 lbs. (0-2 mos.)	1.5 mL (48 mg)	DO NOT GIVE
13-16 lbs. (3-6 mos.)	3 mL (96 mg)	DO NOT GIVE
17-20 lbs. (7-10 mos.)	4 mL (128 mg)	4 mL (80 mg)
21-25 lbs. (11-18 mos.)	5 mL (160 mg)	5 mL (100 mg)
26-31 lbs. (19 mos-3yrs)	6 mL (192 mg)	6 mL (120 mg)
32-35 lbs. (3-4 yrs.)	7 mL (224 mg)	7.5 mL (150 mg)
36-40 lbs. (4-5 yrs.)	8 mL (256 mg)	8.5 mL (170 mg)
41-45 lbs. (5-6 yrs.)	9 mL (288 mg)	9.5 mL (190 mg)
41-51 lbs. (5-6 yrs.)	10 mL (320 mg)	11 mL (220 mg)
52-64 lbs. (7-9 yrs.)	12 mL (384 mg)	13 mL (260 mg)
65-79+ lbs. (10-14 yrs.)	15 mL (480 mg)	15 mL (300 mg)

Patient Assessment

Scene Size Up

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 Protocol** if appropriate.
4. Observe position of patient, mechanism of injury, surroundings.
5. Identify self.
6. Utilize universal precautions in all protocols.
7. Determine if patient has a valid Do-not-resuscitate bracelet/order.

Primary Survey

1. Airway:
    A. Protect spine from movement in trauma victims. Provide continuous spinal precautions. Follow the **Spinal Injury Assessment Protocol**.
    B. Observe the mouth and upper airway for air movement.
    C. Establish and maintain the airway. Follow the **Emergency Airway Procedure.**
    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.**
3. Circulation
    A. Check pulse and begin CPR if no central pulse. Follow **Cardiac Arrest – General Protocol Adult or Pediatric** or **Neonatal Resuscitation 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.**)
    D. Check capillary refill time in fingertips.
    E. If evidence of shock or hypovolemia begin treatment according to **Shock Protocol.**
4. Level of consciousness:
    A. Note mental status (AVPU)
        a. Alert
        b. Verbal stimuli response
        c. Painful stimuli response
        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

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 indicated in protocol.
   C. Blood glucose measurement as available and appropriate.
   D. Pulse oximetry as available and appropriate.
   E. ECG monitoring as indicated in protocol.
   F. 12 Lead if available and appropriate, follow **12 Lead ECG Procedure**.
   G. Monitor capnography, if available.

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 stabilization; follow the **Spinal Injury Assessment 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 if available and appropriate

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.

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 assessment protocol:
   A. **General Pre-hospital Care**
   B. **Newborn Assessment, Treatment and Resuscitation**
   C. **Cardiac Arrest – General Protocol**
   D. **Pediatric Cardiac Arrest – General Protocol**
   E. **General Trauma**
   F. **Spinal Injury Assessment**

Patient Care Record, Electronic Documentation & EMS Information System

This protocol is to be followed for completion of EMS Patient Care Records (PCR) and the use of an electronic documentation and information system.

1. **Responsibility**
   A. An electronic EMS PCR must be completed on any request for service to which a life support agency is dispatched. 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. All PCR reports will be made available to the receiving facility, the MCA and the Bureau of EMS, Trauma and Preparedness, in electronic format.
   C. If a patient is evaluated and/or treated and is not transported a Refusal of Treatment and/or Transport Evaluation Form shall be completed.
2. **Documentation**
   A. The PCR shall be created using a National EMS Information System (NEMSIS) and State of Michigan compliant software package allowing for upload to the state repository. All electronic charting software must meet or exceed State of Michigan requirements. To be compliant with MI-EMSIS, agencies must use a NEMSIS Gold Compliant system.
   B. Signed electronic or paper PCRs shall be maintained by the EMS agency as the official medical record for each patient treated and/or transported.
      a. Each PCR 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 chronology and clarity of patient care including history, assessment, treatment, response to that treatment, changes in patient's condition upon arrival at destination and transfer of responsibility for care.
      b. The agency PCR shall be considered a confidential medical record and treated in accordance with state and federal law.
      c. Each agency's PCR shall be signed by the person documented as the agency's Primary Care Provider for that particular patient/incident.
3. **Distribution**
   A. The transporting unit shall provide written patient care documentation, along with a verbal report, prior to leaving the receiving facility. An agency may be granted permission from their MCA to transmit a PCR by fax or electronically to the hospital deferring delivery under any of the following circumstances**:**
      a. An agency that is transporting out of their primary service area.
      b. An agency completing the PCR using an MCA approved mobile EMSIS**.**
      c. An agency that is dispatched for another emergency call.
      d. As otherwise approved by the MCA.
4. **Submission to MI-EMSIS Data Repository**

A. All agencies using approved EMSIS software shall transfer data 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 using approved EMSIS software are responsible to ensure that the quality of the data submitted to the MI-EMSIS repository is an accurate reflection of the information entered into their EMS information system.
C. Agencies entering data from paper PCRs after-the-fact are responsible for entering those PCRs in accordance with the above time frames.

5. **Utilizing Data**
   A. Data submitted by the life support agencies shall be reviewed by the medical control authority professional standards review organization 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.
   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 professional standards review organization (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:
      a. 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.
      b. Use appropriate safeguards to prevent use or disclosure of the information other than as provided by this agreement.
      c. 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.
      d. Report any actual or suspected breach, intrusion, or unauthorized use or disclosure to the MDHHS EMS and Trauma Systems Section 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.
      e. Mitigate the effects of any breach, intrusion, or unauthorized use or disclosure.
      f. Comply with the Michigan Identity Theft Protection Act notification procedures at MCL 445.61 et seq.
      g. 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.

Patient Restraint

Purpose: To ensure appropriate restraint of patients and to assure patient, others and EMS safety.

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.

Physical Restraint Procedure

1. Ensure that enough personnel are available to properly control the patient and establish the restraints.
2. Explain the purpose of the restraints.
3. Physically control the patient and apply restraints.
   A. If patient continues to resist physical restraints, consider chemical restraint.
4. 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.
5. Attempt to identify common physical causes for patient's abnormal behavior.
   - Hypoxia
   - Hypoglycemia
   - Head Trauma
   - ETOH/ Substances use/ abuse
6. Patient should be secured to a backboard or stretcher only. Patients must never be secured directly to a vehicle or immovable object.
7. Transport patient.
8. Inform hospital that restraints are in place and assistance will be necessary to continue restraint of the patient.

Chemical Restraint Procedure

1. Per MCA selection, administer Midazolam 10 mg IM or 5 mg IN (if available) or Ketamine 4 mg/kg IM.

MCA Selection (Choose One)

☑ Midazolam 10 mg IM or 5 mg IN (if available) **OR** ☐ Ketamine 4 mg/kg IM or IN

2. Monitor capnography, if available.

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.
2. Stay with a restrained patient at all times, be observant for possible vomiting and be

prepared to turn the patient and suction if necessary.

3. Documentation should include:
    A. A description of the circumstance / behavior which precipitated the use of restraints.
    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:
    A. An officer must be present with the patient at all times at the scene, as well as in the ambulance during transport.
    B. 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 or any restraint devices that require a key to remove.
    B. Backboards to “sandwich” the patient.
    C. Restraints which secures the patient’s hands and feet behind the back.
    D. Restraints that “hog tie” the patient.
    E. Any device that restricts normal breathing.

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."*

Patient Sedation

Purpose: Proper sedation of patients requiring a painful medical procedure. This procedure is for Paramedic use only.

Indications for Sedation

1. Electrical Therapy (Cardioversion or Transcutaneous pacing)
2. Post intubation sedation
3. CPAP/BiPAP only under direct Medical Control Order

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, if available

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 sedation medication may be given pre-radio if authorized by the MCA. Medical Control must be contacted if a different sedation medication is needed**

Pediatric 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 0.2 mg/kg IV/IO titrated slowly (IN, if available); may repeat once in 5 minutes.

Adult 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 0.2 mg/kg IV/IO titrated slowly (IN, if available); may repeat once in 5 minutes

Possible orders post radio contact

1. Additional sedation as needed.
2. Sedation for CPAP/BiPAP

Pleural Decompression

Indications

1. Suspected Tension Pneumothorax (not simple pneumothorax) with hemodynamic compromise.
2. Considered for patients who remain in PEA after treatment of other reversible causes of PEA have been unsuccessful.

Presentation of Tension Pneumothorax

A tension pneumothorax will have at least one of the following:

1. Severe respiratory distress in the conscious/breathing patient with **hemodynamic compromise (hypotension)**.
2. 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. Large bore IV catheter - 14 gauge or larger and at least 3" in length (catheter should not have any type of flow restricting valve); or other MCA approved commercial device.

MCA Approved Commercial Device

☐ Yes:
☑ No

     - b. Antiseptic swabs
     - c. Dressing and tape
   - B. Identify landmarks
     - a. Insertion site is the mid-clavicular line at the second intercostal space just above the third rib.
   - 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.

Pediatric Considerations

1. To perform needle decompression use an 18 or 20 gauge over the needle catheter inserting the needle in the mid-clavicular line at the second intercostal space, just above the third rib.

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.

Individuals who are competent may object to treatment or transportation by EMS personnel. MCL 333.20969 "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."

1. **Definition**
    A. "Competent individual":
        a. One who is awake, oriented, and is capable of understanding the circumstances of the current situation.
        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 a parent, or has been granted emancipation by the court.

2. **Procedure for Competent Individual Refusing Care 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, consider contacting medical control.
    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.
    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.

3. **Procedure for the Individual Incapable of Competently Objecting to Treatment or Transportation**
    A. Contact medical control as soon as practical and follow applicable treatment protocol.

B. Any patient with an urgent/life-threatening illness or injury who is incapable of competently objecting to treatment or transportation shall be transported by EMS for further evaluation and treatment.
C. Police assistance may be sought if needed.
D. A patient with non-urgent/non-life-threatening illness or injury who is incapable of competently objecting to treatment or transportation should be transported for further evaluation and treatment after consultation with on-line medical control.

4. Procedure for the Individual who becomes Competent after Treatment has been Initiated and Refuses Transport

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

5. Procedure for the Minor Patient Refusing Care or Transport

A. A minor is any individual under the age of 18 and who is not emancipated.
B. In general, 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.
C. Treatment and transport of real or potential life-threatening emergencies will not be delayed by attempts to contact the parent or guardian.
D. For all emergency and non-emergency patients, contact medical control.

6. Procedure for Parent/Guardian Refusing Care 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 or transportation.
C. Explain possible complications that may develop without proper care 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.

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

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_____ Witness Printed Name_____
Date and Time_____

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 position of 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 a mechanism of injury with the potential for causing cervical spine 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).

   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 Protocol**.
3. Spinal precautions in the patient wearing a helmet should be according to the Helmet Removal Procedure.
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.

Termination of Resuscitation

1. Follow the **Cardiac Arrest - General Protocol**.
2. Medical cardiac arrest patients undergoing attempted resuscitation should not be transported unless return of spontaneous circulation (ROSC) is achieved or transport is ordered by medical control or otherwise specified in protocol. These patients should have resuscitation continued at the scene for at least 30 minutes. Temporary return of pulse qualifies as ROSC.
   If ALS personnel believe a prolonged resuscitation at the scene will be unduly distressing to the patient's family or bystanders, transport may begin prior to the termination of resuscitation. If the resuscitation cannot be safely and efficiently performed on scene transport may begin whenever deemed appropriate by the ALS personnel.
3. If the resuscitation has been unsuccessful after at least 30 minutes (ALS time without ROSC), the resuscitation may be terminated with the permission of medical control. If persistent Ventricular Fibrillation, prompt emergency transport will be initiated. **Once resuscitation is initiated by ALS or LALS it may be terminated only at the direction of medical control.** ROSC, i.e. return of a pulse resets the 30 minute clock and transport should be initiated.
4. Exceptions to the 30 minute time requirement may be requested of Medical Control. Care is to be provided, according to protocol, until such time as it is felt that appropriate procedures and medication are administered based on the medical condition and presentation of the patient. Medical Control must be contacted prior to termination of resuscitation. Total resuscitation time should be provided in the communication.
5. Once resuscitation is terminated, the prehospital personnel will provide information to the family which should include medical control procedures for termination of resuscitation.
6. The medical examiner system will be activated consistent with **Dead on Scene Protocol.**

Tourniquet Application

Purpose: A tourniquet is a constricting or compressing device used to control venous and arterial circulation to an extremity for a period of time. Pressure is applied circumferentially to the skin and underlying tissues a limb; this pressure is transferred to the vessel wall causing a temporary occlusion. There are a number of commercially available tourniquets available for pre-hospital and hospital patients of exsanguinating extremity trauma. While there are potential risks involved in the utilization of tourniquets (see "Notes" section), expeditious and clinically appropriate application in the presence of potentially life threatening hemorrhage is in keeping not only with the standards of medical professionals, but also with the best interests of the patient.

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. Check neurovascular status prior to tourniquet application (pulse, sensation, motor function distal to hemorrhage).
2. Apply tourniquet proximal to the area of bleeding, at least 3-5 centimeters from the wound margins.
3. Secure the tourniquet in place; continue to tighten the tourniquet until hemorrhage is controlled – avoid "over-tightening" the tourniquet. Use only the minimal effective pressure required to reliably maintain arterial occlusion throughout the procedure.
4. Elevate the extremity if possible.
5. Note the time the tourniquet was applied. Reassess neurovascular status every five minutes post application.
6. Notify the receiving hospital that a tourniquet is in place. Once tourniquet is in place, do not remove prior to transferring patient to the emergency department staff.

Notes:

- Tourniquets should not be applied over joints. Application of the cuff over the peroneal nerve (knee or ankle) or ulnar nerve (the elbow) may result in nerve damage or paralysis.

- Tourniquets should not be applied over clothing. Any limb with an applied tourniquet should be fully exposed with removal of all clothing, and the tourniquet should never be covered with any other bandage.
- 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.
- **A tourniquet should not be loosened in any patient with obvious signs of shock or amputation that necessitated use of the device.**

Vascular Access & IV Fluid Therapy

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. Status epilepticus
    F. Contact medical control for other situations without delaying 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. If infiltration occurs (rare), do not reuse the same bone as fluid will leak out of the original hole; select another site.
    B. Do not place in a fractured extremity. If the femur is fractured, use the opposite leg.

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:
    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 TKO 18 ga - 20 ga Angiocath
2. Adult trauma, bleeding or cardiac arrest 14 ga - 18 ga.
3. Pediatrics 20 ga - 24 ga Angiocath

Flow Rates

1. Saline lock IV is preferred, unless fluid resuscitation is needed.
2. Flow rates and changes in flow rates must be documented on the EMS Patient Care Record.
3. The standard IV/IO fluid bolus volume will be 1 liter normal saline with repeat as necessary, unless otherwise noted by protocol. IV/IO fluid bolus is contraindicated in patients with pulmonary edema. Volume for pediatric IV/IO fluid bolus is 20 mL/kg, unless otherwise noted by protocol.
4. Medicated drips should be piggybacked into the main IV line or saline lock.

Solutions – Unless otherwise specified, the IV solution of choice is Normal Saline 0.9% (NS).

IV Tubing

1. Macrodrip 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.
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 Normal 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.
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 normal saline and gently infuse normal saline.
    B. Observe for normal saline leakage or SQ tissue swelling.
        a. If neither occurs, proceed.
        b. If either occurs, select a different site.
9. Connect the appropriate IV equipment (normal saline locks not indicated in IO placement).
10. Administer the appropriate fluids and/or drugs.
11. Stabilize the entire intraosseous set-up as if securing an impaled object.
12. In conscious patients experiencing pain with IO infusion, consider administering Lidocaine 2%, 20 mg IO for adult patients, 0.5 mg/kg for pediatrics administer to a maximum of 20 mg. (Lidocaine 2% = 20 mg/mL).
13. If the IO is unsuccessful after 2 attempts, contact Medical Control.

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. Capnography is a graphic representation of exhaled carbon dioxide. Capnography is a waveform along with a numeric representation. Capnography is the preferred method of detection for ALS providers and will be mandatory for all ALS providers by October 1, 2018.
2. Capnometry is simply a numeric representation of exhaled carbon dioxide.
    a. A colorimetric end tidal carbon dioxide monitor is a rudimentary form of capnometry and is acceptable for use in MFR and BLS applications.
    b. Capnometry that includes a numerical read out is preferred to colorimetric capnometry.

Indications:

1. Determining appropriate placement of an airway has taken place.
    A. Capnography/Capnometry **must** be utilized to confirm endotracheal tube placement.
    B. Capnography/Capnometry **must** be utilized on all supraglottic airways.

2. Continuous monitoring of the integrity of the ventilatory circuit.
    A. Capnography **may** be utilized in patients receiving assisted ventilations without advanced airways (used between the face mask and the bag-valve).
    B. Capnography **must** be used for patients on transport ventilators.

3. Monitoring severity of pulmonary disease (bronchospasm) and evaluating response to therapy
    A. Capnography **may** be utilized in patients with respiratory distress, or with signs and symptoms suggestive of acidosis.

4. Monitoring therapy intended to increase coronary blood flow, reflected in CO_2 elimination
    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

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 CO_2 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 CO_2 level and waveform characteristics
7. Any loss of CO_2 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.

High Performance CPR (HP-CPR) - Optional

This procedure is an outline of High Performance CPR and is to be followed for all adult cardiac arrest patients. High Performance CPR improves a victim's chances of survival.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Pre-Medical Control
MFR/EMT/SPECIALIST/PARAMEDIC

1. Confirm cardiac arrest using **Patient Assessment Protocol**.
   a. Confirm unresponsiveness.
   b. Assess the patient for signs of absent or ineffective breathing. Agonal gasps are **not** signs of normal breathing.
   c. Check for a carotid pulse for at least 5 seconds, but not more than 10 seconds.

   Note: Providers should assess the breathing and pulse simultaneously.

2. Move patient to hard flat surface where there is ample room for team dynamics. Begin care using High Performance CPR, utilizing the C-A-B (Compression, Airway, Breathing) sequence. **Apply an AED as soon as one is available.**

   Note: There may not be enough responders to initially fill all the roles outlined in the team diagram. As staffing levels increase, fill the positions as outlined.

3. **Rescuer 1** - Take position to perform chest compressions.
   a. Push hard, at least 2 to 2.4 inches deep (1/3 the depth of the patient chest), and fast (100-120 compressions/minute) and let the chest recoil fully between each compression.
   b. A 30:2 compression to ventilation ratio should be maintained. Ventilate to chest rise and avoid excessive ventilations.
   c. Keep pauses in CPR to a minimum. Chest compression fraction (CCF), the percentage of time in which chest compressions are done by rescuers during arrest, should be greater than 80 percent.

4. **Rescuer 2** - Upon arrival assess Rescuer 1 for CPR effectiveness, and relieve Rescuer 1 on chest compressions if necessary. The rescuer not on chest compressions should take position for ventilations, and ensure the AED has been placed if available.
   a. The rescuer providing ventilations should maintain the patient airway with basic airway adjunct (OPA/NPA) and provide ventilations at a rate of 2 breaths per 30 compressions utilizing a bag-valve-mask. See **Emergency Airway Procedure**.

5. **Rescuer 3** - Upon arrival will typically take up position to assist with chest compressions, on the opposite side from the rescuer currently providing them.
   a. Rescuers MUST switch compressors at least every 2 minutes. It is highly encouraged to do so more often to avoid fatigue and ensure the quality of compressions.
   b. If rescuer 3 is part of the ALS crew (there are only two other responders on scene), the most appropriate crew member should assume this role until additional first responders are available.

6. **Rescuer 4** - Assume the role of team leader in conjunction with the primary ALS provider on scene. As team leader, this person should oversee the performance of high-quality CPR and high-performance team dynamics. The team leader should ensure the quality of CPR by monitoring the following components:
   a. Chest compression fraction (CCF)
   b. Chest compression rate
   c. Chest compression depth
   d. Chest compression recoil
   e. Quality ventilations

7. Any additional arriving rescuers should supplement the activities in the roles identified above.

8. When in the sequence above ALS arrives, the primary ALS provider will work in conjunction with the team leader and direct all ALS care. **BLS procedures being performed should not be interrupted. Vascular access and advanced airway, although important, should not interrupt high-quality CPR.**
   a. If good chest rise and compliance are present, there may not be a need for an immediate advanced airway.
   b. As soon as appropriate, introduce an advanced airway. Once an advanced airway is in place compressions should be continuous. Give 1 breath every 6 seconds.

   The intent is to achieve a CCF of at least 80% by aggressively minimizing interruptions to chest compressions.

Post-Medical Control

1. Additional BLS and/or ALS care as ordered.
2. Consider termination of resuscitation per **Termination of Resuscitation Protocol.**

Notes:

1. **Excellent high-quality CPR is a priority.**
   a. **Chest compression fraction of 80% or greater.** Keep pauses in compressions to a minimum.
      i. Continue CPR while monitor/AED is charging and immediately after shock is delivered.
      ii. Non-ALS providers should only pause for pulse checks when signs of return of spontaneous circulation (ROSC) are present.
      iii. ALS providers should pause **no more than** every 2 minutes to attempt monitor and pulse checks, or upon signs of ROSC.
   b. **Chest compression rate of 100-120 per minute.** Use real-time measuring devices and/or metronome if available.
   c. **Compress at least 2 to 2.4 inches in depth.**
   d. **Allow full chest recoil.** Avoid leaning on the patient's chest.

e. **Avoid excessive ventilation.** Minimize rate and tidal volume. Excessive ventilations can cause an increase in intra-thoracic pressure, inhibiting blood return to the heart. Use chest rise as an indicator of quality ventilations.

2. **High performance team dynamics are essential to maintaining high-quality CPR.**
   a. Follow assigned roles as indicated above.
   b. Use closed-loop communication to ensure quality of care (when the sender gives a message, the receiver repeats this back).
   c. Although a primary function of the team leader, all team members should ensure the high-quality aspects, with emphasis on uninterrupted chest compressions at all times.

3. Medical cardiac arrest patients undergoing attempted resuscitation should not be transported unless ROSC is achieved or transport is ordered by medical control. Refer to **Cardiac Arrest – ROSC Protocol**.

4. If an automated compression device (ACD) is available, it may be considered after at least 5 minutes of manual high-quality CPR. This time is intended to ensure immediate start to chest compressions without delay, as well as early defibrillation of patients in an initial shockable rhythm.

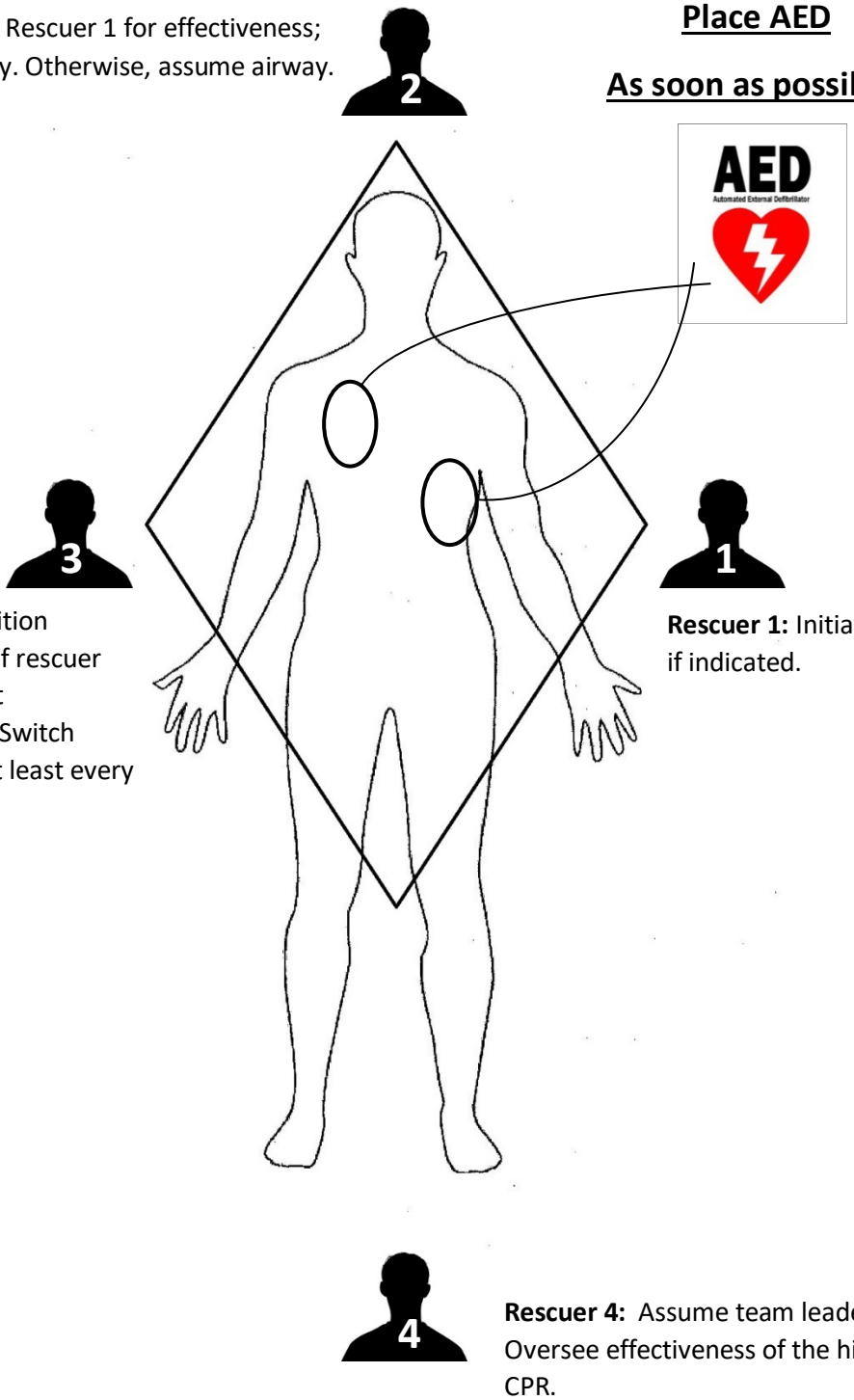
5. Chest compressions should not be interrupted during the placement of the AED/cardiac monitor pads.

6. Use of HP-CPR checklists, metronome and CPR feedback devices are strongly encouraged.

Rescuer 2: Assess Rescuer 1 for effectiveness; switch if necessary. Otherwise, assume airway.

Place AED

As soon as possible!



Rescuer 3: Position opposite side of rescuer providing chest compressions. Switch compressors at least every two minutes.

Rescuer 1: Initiates CPR, if indicated.

Rescuer 4: Assume team leader. Oversee effectiveness of the high-quality CPR.

Blood Product Administration

Blood or blood product administration may be continued by paramedics for interfacility patient transports only after completion of MCA approved education, per the Interfacility Patient Transfer protocol. If additional units of blood are indicated, they may be initiated as ordered by the sending facility. Do not take more blood or blood product than is anticipated to be used during transport. Receiving facilities may not be able to use leftover units of blood.

Indications:
1. Sending facility has blood running

Adverse Effects:
Consider termination if:
1. Signs of anaphylaxis or transfusion reaction
2. New onset chest pain or difficulty breathing.

Administration
Administer as per medical direction.

Procedure:
1. Follow protocol for **Interfacility Patient Transfer**.
2. Use only normal saline with blood or blood product infusions.
3. If it is anticipated that additional units will be initiated during transport, check the blood at the sending facility per the procedure used by the sending facility. Document the name and title of the individual who was responsible for checking the blood prior to transport.
4. Evaluate VS before, during and after blood infusion
5. Monitor temperature before infusion when possible, prior to transfer and at 15 minutes from the start of each blood product, every 30 minutes thereafter, and prior to transfer of care to the receiving facility.
6. If you suspect a reaction or see signs and symptoms including: fever, chills, flank pain, vital sign changes, nausea, headache, urticaria, dyspnea or bronchospasm
    a. Stop the infusion
    b. Keep the IV open with normal saline
    c. Notify the receiving physician
    d. Intervene for symptoms as necessary

MUSKEGON COUNTY

Protocols

Protocol Number | **Protocol Name**

System

Table of Contents

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

System

Table of Contents

Cancellation/Downgrade of Call Policy

Purpose: To allow cancellation or 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,

or

B. Any licensed EMS personnel on the scene cancels the responding EMS vehicles.

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).

Use of Emergency Lights and Sirens during Transport

Procedure

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.

B. **Transporting a Patient**
1. EMS units may transport patients using lights and sirens when:
   2. The patient's condition meets Priority One prioritization level **AND** the condition is unstable or deteriorating **AND** there is a need to circumvent significant traffic delays and obstructions
   OR
   3. The patient's condition requires immediate lifesaving intervention which cannot be accomplished by EMS personnel, with approved equipment **AND** there is a need to circumvent traffic delays or obstruction

2. Non-emergency patients will **NOT** be transported with the use of lights and siren.

C. **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.

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**
Transporting Life Support Agencies shall ensure annual training surrounding the Michigan Motor Vehicle Code, safe use of lights and siren, this policy and related agency polices.

G. **Agency Specific Policies**
This policy does not preclude individual agencies from developing internal policies on this subject, as long as the policy includes the contents of this policy as a minimum.

Use of Emergency Lights and Sirens during Transport - Addendum

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*		*X*	*X*	*X*	

Purpose: To further expound upon or define state protocol as implemented among the West Michigan Regional Medical Control Consortium (WMRMCC) partner Medical Control Authorities

Policy: **Transporting a Patient**
This protocol amends the state ***Use of Emergency Lights and Sirens During Transport*** protocol, section B.1:

a. The patient's condition meets Echo or Delta prioritization level **AND** the condition is unstable or deteriorating **AND** there is a need to circumvent significant traffic delays and obstructions

OR

b. The patient's condition requires immediate lifesaving intervention which cannot be accomplished by EMS personnel, with approved equipment **AND** there is a need to circumvent traffic delays or obstruction

No other changes are made to the state protocol.

Destination and Diversion Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Purpose: **To provide a guideline for the decision-making process to be followed by EMS personnel in the determination of a destination hospital.**

I. General Destination Guidelines

A. For the purposes of **work related injuries or illness**, an employer is legally permitted to choose where an employee is treated, employers may only choose from amongst the appropriate and approved EMS destinations provided in this protocol.
   1. EMS may not transport emergency patients to destinations which would violate statute, or this protocol, including the transport of an emergency patient to an urgent care center or physician's office.
   2. EMS may not transport an emergency patient to a lesser level trauma facility than is required by protocol for the severity and mechanism of injury as identified in the trauma destination matrix.
   3. Refer to the Alternative Destination protocol for patients no longer deemed to be emergency patients.

B. If the hospital of choice, in situations where choice is permitted, is outside of the MCA and transport to that hospital would remove the EMS vehicle from availability for an extended period, approval from either on-line Medical Control or the ambulance dispatch service, depending on County operation, will be required prior to leaving the county.[1] If not approved, the patient/family and the EMS personnel may select a local destination based on the destination matrix. Where no preference exists, the closest, most appropriate hospital per the destination matrix shall be selected.

C. EMS Personnel may utilize the destination matrix to assist patients, family, guardians or, if work-related, the employer in choosing appropriate destinations. If EMS personnel are notified of hospital diversions, these may be discussed with the patient, family, guardians or, if work-related, the employer as well. Neither of these instances constitutes an effort to induce an individual to patronize a particular hospital.[2]

D. No other individuals shall be allowed to determine the transportation destination of the patient without prior approval of the medical control physician: (police, fire, bystander, physician[3], etc.)

[1] *The decision to transport outside of the county will be based on the clinical condition of the patient, the distance to the destination, the availability of ambulances in the system, weather conditions and many other factors. The authority for this decision rests with the on-line medical control physician/ambulance service, depending on county specific operation.*
[2] *MCL §333.20921(2) An ambulance operation shall not do 1 or more of the following: (b) Induce or seek to induce any person engaging an ambulance to patronize a long-term care facility, mortuary or hospital.*
[3] *See the Physician on scene Policy. A patient's personal physician, in direct attendance, may direct/impact a transport decision, from amongst protocol approved facilities.*

E. Radio reports for facilities using EMTrack are required for all ECHO (Priority 1) and DELTA (Priority 2- High Acuity) level patients, all STEMI and STROKE patients, any time medication or procedural orders are needed, and if there is any question as to whether or not the hospital will accept or divert the patient, regardless of the assigned severity level.

II. Trauma Transport Destination Decisions

Refer to the Trauma Triage Guide along with the appropriate county Destination Matrix

III. Medical Transport Decisions

Medical Cases must be evaluated against the appropriate county Destination matrix within the following rules in order:

A. If patient is a legal minor, or is incompetent[4], transport to the hospital of family or guardian choice according to the destination matrix.
B. Adults are considered to be patients 15 or older for heading selection on the matrix
C. Pediatrics are considered to be patients less than 15 for heading selection on the matrix
D. Any medical patient transporting to Spectrum Health BWH/HDVCH will be categorized first by age.
    1. Medical patients less than 18 will be accepted at the HDVCH ED.
    2. Medical patients 18 and over will be accepted at BWH.
E. Blodgett (BLH) will not accept medical patients under 15. The only exception to this will be for a child under 15 with only minor illness where family members are being transported to BLH for the same incident.
F. STEMI patients shall be transported to hospitals following the county destination matrix with consideration for early contact to On-line Medical Control (if applicable) and preparation for direct transport to facilities Interventional Cardiac Cath Labs (not diagnostic labs). Patient or family may choose any of the protocol approved and appropriate destinations for this condition.
G. Adult patients with stroke/TIA symptoms shall be transported to hospitals following the county destination matrix with consideration for early contact to On-line Medical Control (if applicable) and preparation for direct transport to a stroke center. Patient or family may choose any of the protocol approved and appropriate destinations for this condition.
H. Adult burn patients with burns less than or equal to 9% (not including the face or perineum) may be transported to appropriately designated hospitals. Patient, family or, if work-related, the employer may choose any of the protocol approved and appropriate destinations.
I. Burns of greater than or equal to 10%, or any significant burns to the face or perineum, where the patient is 18 or older must be transported to the closest burn center. Patient, family or employer choice does not apply. Contact local online Medical Control if destination is not clear.
J. Burns of greater than or equal to 10% or any significant burns to the face or perineum, where the patient is less than 18 must be transported to HDVCH. Patient, family or employer choice does not apply. Contact local online Medical Control if destination is not clear.
K. Patients in active labor should be transported to facilities with OB and labor and delivery capabilities.
L. Pregnant patients with complaints unrelated to pregnancy or involved in traumatic situations without impact on pregnancy may be accepted at hospitals without OB services based upon acceptance of the patient by that hospital; contact the hospital early if there is a potential for diversion. Hospitals not having OB services may opt to divert the patient.
M. Post-delivery patients, where the mother and baby are transporting together and the baby has significant medical problems, should contact and transport to HDVCH.

[4] *Refer to the Refusal of Care protocol for the clinical measure of competence*

IV. Patient Diversions

A. Once a decision has been made to transport a patient to a particular hospital, the patient may be diverted to another hospital if:

1. On-line radio contact is made with the initial hospital and that facility requests immediate diversion to another hospital. Documentation of the reason for the diversion should be included in the EMS Medical Record.
2. The patient experiences an immediate, life-threatening deterioration in condition and, in the best medical judgment of the EMS personnel, should be transported to a closer facility.
    a. Immediate on-line medical direction should be established with the hospital to which the patient will be diverted.
    b. Contact with the initial hospital should be made as quickly as possible to inform it of the diversion.
    c. It may be prudent to obtain contact information from family intending to meet the ambulance at the hospital, prior to departing a scene, in case the patient is diverted so they may be informed of destination changes.

Note: Each facility has the authority to develop and administer written policies concerning the temporary closing of emergency departments. By statute, the medical control authority, based on needs of the EMS system, may determine the destination of the patient regardless of the diversion status (open or closed) of the local facilities.

ALLEGAN County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Allegan General Hospital	Borgess Pipp Hospital				
ADULT Trauma **Utilize Trauma Destination Guideline**	**Per Trauma Guidelines**	**Per Trauma Guidelines**				
ADULT Medical – Cardiovascular[1] **All Priorities**	**Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes**	**Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes**				
Adult Medical - Non-cardiovascular **All Priorities**	**All**	**All**				
Adult Medical - STROKE **ALL Priorities**	**All**	**DIVERT**				
PEDIATRIC Trauma[2] **Utilize Trauma Destination Guidelines**	**Per Trauma Guidelines**	**Per Trauma Guidelines**				
PEDIATRIC Medical[3] **All Priorities**	**Non- Critical only**	**Non- Critical only**				
BURNS – ADULT	**Non- Critical, ≤9% BSA ONLY**	**Non-critical. ≤9% BSA ONLY**				
BURNS - PEDIATRIC[3]	**Non- Critical, ≤9% BSA ONLY**	**Non-critical. ≤9% BSA ONLY**				
OBSTETRIC	**DIVERT**	**DIVERT**				

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

BARRY County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Pennock					
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	Call early for destination					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	Non- Critical only, call early					
BURNS – ADULT	Non- Critical, ≤9% BSA ONLY					
BURNS - PEDIATRIC[3]	Non- Critical, ≤9% BSA ONLY					
OBSTETRIC	DIVERT					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

CLARE County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Mid-Michigan Medical Center - CLARE					
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	Call early for destination					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	Non- Critical only, call early					
BURNS – ADULT	Non- Critical, ≤9% BSA ONLY					
BURNS - PEDIATRIC[3]	Non- Critical, ≤9% BSA ONLY					
OBSTETRIC	DIVERT					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

IONIA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Sparrow - Ionia					
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines					
ADULT Medical – Cardiovascular[1] All Priorities	Call early for destination Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	Call early for destination					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	Non- Critical only, call early					
BURNS – ADULT	Non- Critical, ≤9% BSA ONLY					
BURNS - PEDIATRIC[3]	Non- Critical, ≤9% BSA ONLY					
OBSTETRIC	DIVERT					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

ISABELLA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	McClaren – Central Michigan	Mid-Michigan Medical Center – Mount Pleasant				
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines	DIVERT				
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes				
Adult Medical - Non-cardiovascular All Priorities	ALL	Charlie, Bravo and Alpha ONLY				
Adult Medical - STROKE ALL Priorities	ALL	Call early for destination				
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	ALL	DIVERT				
PEDIATRIC Medical[3] All Priorities	ALL	DIVERT				
BURNS – ADULT	ALL	Non- Critical, ≤9% BSA ONLY				
BURNS - PEDIATRIC[3]	ALL	DIVERT				
OBSTETRIC	ALL	DIVERT				

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

KENT County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Butterworth Campus (BWH)	Helen DeVos Children's Hospital (HDVCH)	Metro Health Hospital (Metro)	Mercy Health Saint Mary's (MHSM)	Mercy Health Saint Mary's– SW (MHSM-SW)	Spectrum Health Blodgett Campus (BLH)
ADULT Trauma Utilize Trauma Destination Guideline	ALL	DIVERT	ALL	ALL	Per Trauma Guidelines	Per Trauma Guidelines
ADULT Medical – Cardiovascular[1] All Priorities	Interventional Cath Lab ALL	DIVERT	Interventional Cath Lab ALL	Interventional Cath Lab ALL	All but STEMI, 3° HB, wide complex tachycardia's	All but STEMI, 3° HB, wide complex tachycardia's
Adult Medical - Non-cardiovascular All Priorities	ALL	DIVERT	ALL	ALL	Charlie, Bravo and Alpha ONLY	ALL
Adult Medical - STROKE ALL Priorities	Stroke Center	DIVERT	Stroke Center	Stroke Center	DIVERT	Stroke Center
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Accepts as designated by HDVCH	Pediatric Level I Trauma Center ALL[3]	Some – See Guide	Some – See Guide	DIVERT	DIVERT[4]
PEDIATRIC Medical[3] All Priorities	DIVERT	Pediatric Hospital ALL	Charlie, Bravo and Alpha	Charlie, Bravo and Alpha	Charlie, Bravo and Alpha	DIVERT
BURNS – ADULT	Burn Center ALL	DIVERT	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY
BURNS - PEDIATRIC[3]	DIVERT	ALL[3]	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	DIVERT	DIVERT
OBSTETRIC	ALL	DIVERT	Greater than 35 weeks	ALL	DIVERT	DIVERT

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff
[4]The only exception to this diversion is a priority 3 patient, under 15, who is going with multiple family members to Spectrum Health Blodgett from the same incident.

MASON County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Ludington					
ADULT Trauma Utilize Trauma Destination Guideline	ALL					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	ALL					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	ALL					
PEDIATRIC Medical[3] All Priorities	ALL					
BURNS – ADULT	ALL (with transfer to burn center)					
BURNS - PEDIATRIC[3]	ALL (with transfer to burn center)					
OBSTETRIC	ALL (no NICU)					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

MECOSTA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Big Rapids					
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	ALL					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	ALL					
BURNS – ADULT	Call early for destination					
BURNS - PEDIATRIC[3]	Call early for destination					
OBSTETRIC	ALL					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

MONTCALM County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Sparrow – Carson City	Sheridan Community Hospital	Spectrum Health Kelsey Campus	Spectrum Health United Campus
ADULT Trauma Utilize Trauma Destination Guideline	Per Trauma Guidelines	Per Trauma Guidelines	Per Trauma Guidelines	Per Trauma Guidelines
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes
Adult Medical - Non-cardiovascular All Priorities	All	All	All	All
Adult Medical - STROKE ALL Priorities	Call early for destination	Call early for destination	Call early for destination	Call early for destination
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination	Call early for destination	Call early for destination	Call early for destination
PEDIATRIC Medical[3] All Priorities	Call early for destination	Call early for destination	Call early for destination	Call early for destination
BURNS – ADULT	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY
BURNS - PEDIATRIC[3]	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY
OBSTETRIC	All	Divert	Divert	All

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

MUSKEGON County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Mercy Health Muskegon					
ADULT Trauma Utilize Trauma Destination Guideline	ALL					
ADULT Medical – Cardiovascular[1] All Priorities	ALL Interventional Cath Lab					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	ALL Stroke Center					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	ALL					
PEDIATRIC Medical[3] All Priorities	ALL					
BURNS – ADULT	ALL					
BURNS - PEDIATRIC[3]	ALL					
OBSTETRIC	ALL					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

NEWAYGO County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Gerber Campus					
ADULT Trauma Utilize Trauma Destination Guideline	Call early for destination					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	Call early for destination					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	ALL					
BURNS – ADULT	Call early for destination					
BURNS - PEDIATRIC[3]	Call early for destination					
OBSTETRIC	ALL					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

OCEANA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Mercy Health Lakeshore Campus					
ADULT Trauma Utilize Trauma Destination Guideline	Some – See Guide					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	ALL					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	Some – Priority 2's and 3's					
BURNS – ADULT	ALL					
BURNS - PEDIATRIC[3]	ALL					
OBSTETRIC	DIVERT					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

OSCEOLA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Spectrum Health Reed City Campus					
ADULT Trauma Utilize Trauma Destination Guideline	Call early for destination					
ADULT Medical – Cardiovascular[1] All Priorities	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes					
Adult Medical - Non-cardiovascular All Priorities	ALL					
Adult Medical - STROKE ALL Priorities	ALL					
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	Call early for destination					
PEDIATRIC Medical[3] All Priorities	ALL					
BURNS – ADULT	Call early for destination					
BURNS - PEDIATRIC[3]	Call early for destination					
OBSTETRIC	Divert					

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

OTTAWA County EMS System Hospital Destinations – December 2020

When a patient is diverted from a hospital, the patient should be given the opportunity to choose from the other appropriate facilities based on this matrix.

	Holland Community Hospital	North Ottawa Community Hospital	Spectrum Health Zeeland Campus			
ADULT Trauma Utilize Trauma Destination Guideline	ALL	ALL	Some - Follow Trauma Destination Guidelines			
ADULT Medical – Cardiovascular[1] All Priorities	Interventional Cath Lab ALL	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes	Some- STEMI or Cardiac Arrest with ROSC, consider bypass if PCI center within 60 minutes			
Adult Medical - Non-cardiovascular All Priorities	ALL	ALL	ALL			
Adult Medical - STROKE ALL Priorities	ALL	ALL	ALL			
PEDIATRIC Trauma[2] Utilize Trauma Destination Guidelines	ALL	Some – See Guide	Some - Follow Trauma Destination Guidelines			
PEDIATRIC Medical[3] All Priorities	ALL	ALL	Some – Priority 2, 3 or immediate lifesaving interventions			
BURNS – ADULT	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY			
BURNS - PEDIATRIC[3]	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY	Non- Critical, ≤9% BSA ONLY			
OBSTETRIC	ALL	DIVERT	ALL			

RED = DIVERT
YELLOW = CAUTION: Special Instructions
GREEN = NO RESTRICTION IN THIS CATEGORY+ ADDITIONAL INFORMATION

[1] Cardiovascular refers to any patient who is experiencing signs or symptoms that may be related to a cardiovascular cause – heart or vascular system (e.g. acute coronary syndrome, aneurysm, etc.)
[2] If a Spectrum facility is designated based on this matrix, all patients under age 18 are to be taken to HDVCH (Spectrum policy: matrix applies first)
[3] Pediatric trauma and burn patients transporting to HDVCH may be sent to the Butterworth ED entrance and trauma bay at the discretion of the HDVCH staff

High-Risk Delivery Transport Guidelines

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):

   ☒ **See Destination & Diversion Policy**

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.

Intercept Policy (Optional for all ALS Systems)

Purpose: The purpose of this policy is to ensure that Advanced Life Support/Limited Advanced Life Support ambulances are dispatched, when available, to patients requiring Advanced Life Support/Limited Advanced Life Support levels of care.

I. Procedure
If a transport has begun by a Basic Life Support (BLS) unit, a rendezvous with an Advanced Life Support (ALS) (Limited Advanced Life Support if ALS unit not available) unit should be attempted at a mutually agreed upon location. Rendezvous is indicated if it will occur at a point which is greater than five (5) minutes from the receiving hospital. For patients in cardiac arrest being transported in BLS units, ALS intercept is indicated at any point during the transport.

A. Indications for ALS Intercept
1. All priority 1 & 2 patients

B. Indications for LALS
1. All Priority 1 patients & some Priority 2 patients as indicated by Medical Control.

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

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 provided with complaint evaluation and prioritization, along with pre-arrival instructions through an Emergency Medical Dispatch program approved by the MCA. Pre-arrival instructions should conform to nationally recognized guidelines.

Lights and Sirens Response to the Scene

I. Medical Priority Response
   A. Priority One – Life-Threatening or Potentially Life Threatening Emergencies Response
      1. Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and sirens while responding to the scene.
   B. Priority Two – Response Per MCA Selection

☐ Life support vehicles, in compliance with Michigan Motor Vehicle Code, use lights and sirens while responding to the scene.

☐ Emergency Vehicles, in compliance with Michigan Vehicle Code, respond with no lights and sirens to the scene

OR

☑ 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.

   C. Priority Three - Non-Life Threatening Emergency Response
      1. Life support vehicles, in compliance with Michigan Motor Vehicle Code, respond with no lights and sirens to the scene

Patient Prioritization Protocol

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*		*X*	*X*	*X*	

This protocol applies to the categorization of patients to communicate potential severity between EMS and the receiving facility.

1. **ECHO** – an ECHO level patient is one who has critical and immediately life-threatening illness or injury such that a physician should be immediately available upon arrival to the hospital.
    a. Radio reports are required to be made to the receiving Emergency Department for all patients categorized as ECHO patients.
    b. STEMI patients with unstable vital signs, or those with life threatening arrhythmia, will always fit into this level

2. **DELTA** – a DELTA level patient is one who has severe illness or injury which needs prompt intervention such that nursing care should be immediately available and physician assessment within 10 minutes.
    a. This may include Intubated patients who stabilize following intubation.
    b. STEMI patients with stable vital signs may be categorized as a DELTA patient or ECHO patient depending of the 12 - lead, the patient presentation, occurrence of arrhythmia, distance to the hospital, etc.

3. **CHARLIE** – a Charlie level patient is one whom has an injury or illness that is stable but which, per protocol, requires vascular access or medication.

4. **BRAVO** – a BRAVO level patient is one whom has only minor injury or illness but for whom delivery to the Emergency Department triage would be inappropriate. These patients are expected to be imminently stable with the expectation that they would remain so for hours within a controlled environment. Patients who are unable to sit, not capable of being left in an unmonitored area, those who are not appropriately clothed or unaccompanied minors could reasonably fit within this level.

5. **ALPHA** – an ALPHA level patient is one whom has only minor injury or illness for who transport to the Emergency Department triage would be appropriate. These patients are expected to be imminently stable with the expectation that they would remain so for hours within a controlled environment. Similarly, they should have no presentation or condition that would preclude them from reasonably being placed in a public area.

Helicopter Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

I. Background Information

A. In summoning helicopter resources, the EMS Provider must weigh patient care needs and the timeliness of response and delivery of the patient to the hospital by helicopter or ground ambulance.

B. The flight team will strive for ground time of less than 15 minutes. Pre-packaging of the patient will minimize ground time.

C. All requests for helicopter resources shall be directed to Aero Med/Flight Com

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 and the level of care available in the area.

II. Indications for Use

A. Trauma Patients
Echo or Delta level patient
1. Long transport times
2. Poor road conditions
3. Entrapment with prolonged extrication
4. MCI

B. Medical Patients
In rare circumstances and based upon clinical judgement of patient benefit by the paramedic, utilization of a helicopter for medical patients may be appropriate.

III. Requesting Helicopter Resources

A. Standby or request for Activation
1. Public Safety Agencies may place the helicopter on Standby or request Activation/response
2. Initiate Standby or Activation early to reduce response time
3. A helicopter may be placed on Standby or Activated based upon dispatch information, by a responding public safety unit or an on-scene EMS resource. The first arriving EMS agency must be made aware of the activation and should set up the LZ and communicate with the responding helicopter.

B. Contact information
1. Telephone - 1-800-862-0921 or 616-391-5330 (preferred)
2. UHF telemetry - contact Flight Com on AirLZ1
3. VHF (HERN) - Contact Aero Med/Flight Com direct (not monitored)

C. Transmission of essential information:
1. Requesting EMS Provider
2. Incident location
3. Radio frequency and channel that helicopter can utilize to contact designated Landing Zone Specialist
4. Trauma or medical

5. Identify any special needs

D. Aero Med/Flight Com will acknowledge and either:
   1. Confirm standby or flight activation with ETA and location confirmation
   2. Delayed response - approximate time of availability
   3. Unable to respond due to weather, busy or out of service
   4. If Aero Med is not available, Flight Com shall arrange for an alternative helicopter service to be placed on standby or to respond.

V. Cancellation

A. A helicopter resource request initiated by a BLS or Public Safety Agency can be canceled by the responding ALS agency **only after an appropriate patient assessment has been conducted.**
B. A helicopter request initiated by an ALS agency may be canceled only by the agency initiating the request.
C. If Aero Med cancels a flight, the pilot/flight team or Flight Com will contact the requesting ALS agency to notify of cancellation.
D. Aero Med Flight Physician may elect to send patient(s) by ground.

VI. Patient/Scene Preparation

A. Landing Zone
   1. When notified of the helicopter's activation, the Scene Medical Commander will delegate the helicopter landing specialist functions to a certified Landing Zone Specialist. The Landing Zone Specialist will coordinate his/her actions with the Scene Medical Commander and must be available to communicate by radio with pilot, or Flight Com by phone.
   2. Helicopter Landing Zone Specialist insures adequate landing area
      a. 120' x 120' (minimum)
      b. Area is free of wires or obstructions
      c. Uses chemical lights to mark site and wind direction
      d. Maintains crowd at a safe distance
      e. Lights obstructions, not helicopter
      f. Communicates with pilot
   3. Landing Zone Specialist is responsible for coordinating communications between the EMS Providers and the helicopter.
      a. Utilize HERN frequency or Aero-Med frequency (AirLZ1), if available. This will allow communications with Flight Com.
      b. Landing Zone Specialist updates the EMS Providers of ETA of helicopter.

VII. Helicopter on Scene

A. The Scene Medical Commander will coordinate activities between the flight team and the on-scene EMS Providers involved with patient care
   1. Identifies the patient(s) that need flight team
   2. Briefs the flight team on status of other patients
B. Flight physician assumes medical control at scene (in accordance with the On-Scene Physician Intervention Policy) and directs which patients are to be transported by helicopter, if any, which by ground, and any further treatment required at scene.
C. Flight physician may declare patient dead at scene, directing appropriate personnel to secure the body and notify medical examiner.
D. Flight physician relinquishes scene control to the Scene Medical Commander for remaining patients and departs with flight team.

VIII. Departure

A. Helicopter Landing Zone Specialist works with pilot to ensure safe departure from scene.
B. Flight team contacts receiving hospital with a status report and ETA.

IX. Documentation

A. EMS Providers shall complete an EMS Patient Care Report to document care given to patient prior to intervention by the Flight Team.

B. The helicopter Flight Team shall provide their MCA and, when requested, the MCA of the scene response with a copy of the Patient Care Report.

Communicable Disease

NOTE: The EMS provider must recognize that any patient that presents with one of the following may be potentially infectious, and must take the necessary precautions to avoid secondary exposure. These precautions include following this protocol.

- A skin rash
- Open wounds
- Blood or other body fluids
- A respiratory illness that produces cough and/or sputum

Exposure Defined:

An exposure is determined to be any breach of the skin by cut, needle stick, absorption or open wound, splash to the eyes, nose or mouth, inhaled, and any other parenteral route.

Reporting Exposures:

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 or 419, that the patient be tested for HIV/Hepatitis B and C surface antigen. The exposed individual shall make the request on a Bureau of EMS, Trauma and Preparedness Form J427 (MDCII Form J427). The exposed individual should also report the exposure in accordance with their employer's policies and procedures.

Follow appropriate infection control procedures.

1. If a patient presents with one of the following symptom complexes, then follow the remainder of this protocol.
    A. Fever > 100.5 F with headache or malaise or myalgia, and cough or shortness of breath or difficulty breathing.
    B. Pustular, papular or vesicular rash distributed over the body in the same stage of development (trunk, face, arms or legs) preceded by fever with rash progressing over days (not weeks or months) and the patient appears ill.
2. Consider the patient to be both airborne and contact contagious. Crew will don the following PPE:
    A. N95 or higher protective mask/respiratory protection
    B. Gloves
    C. Goggles or face shield

DO NOT REMOVE protective equipment during patient transport.

3. Positive pressure ventilation should be performed using a resuscitation bag-valve mask. If available, one equipped to provide HEPA or equivalent filtration of expired air should be used. Also see the section in this protocol “Mechanically Ventilated Patients".

4. Patient should wear a paper surgical mask to reduce droplet production, if tolerated.

5. Notify the receiving facility, prior to transport, of the patient's condition to facilitate preparation of the facility and institution of appropriate infection control procedures.

6. Hands must be washed or disinfected with a waterless hand sanitizer immediately after removal of gloves. Hand hygiene is of primary importance for all personnel working with patients.

7. 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.

8. Patients should also be encouraged to use hand sanitizers.

9. Unless critical, do not allow additional passengers to travel with the patient in the ambulance.

10. All PPE and linens will be placed in an impervious biohazard plastic bag upon arrival at destination and disposed of in accordance with the direction from the hospital personnel.

MECHANICALLY VENTILATED PATIENTS

PARAMEDIC

1. Mechanical ventilators for potentially contagious patient transports must provide HEPA filtration of airflow exhaust.

2. EMS providers should consult their ventilator equipment manufacturer to confirm appropriate filtration capability and the effect of filtration on positive pressure ventilation.

CLEANING AND DISINFECTION

Cleaning and Disinfection after transporting a potentially contagious patient must be done immediately and prior to transporting additional patients. Contaminated non-reusable equipment should be placed in biohazard bags and disposed of at hospital. Contaminated reusable patient care equipment should be placed in biohazard bags and labeled for cleaning and disinfection according to manufacturer's instruction.

INTER-FACILITY TRANSFERS

1. Follow the above precautions for inter-facility transfers.

2. Prior to transporting the patient, the receiving facility should be notified and given and ETA for patient arrival allowing them time to prepare to receive this patient.

3. Clarify with receiving facility the appropriate entrance and route inside the hospital to be used once crew has arrived at the receiving facility.

4. All unnecessary equipment items should be removed from the vehicle to avoid contamination.

5. All transport personnel will wear the following PPE:

    A. Gloves

    B. Gown

    C. Shoe Covers

    D. N-95 (or higher) protective mask

6. Drape/cover interior of patient compartment and stretcher (utilizing plastic or disposable sheets with plastic backing).

7. Place disposable surgical mask on patient

8. Cover patient with linen sheet to reduce chance of contaminating objects in area.

9. All PPE and linens will be placed in an impervious biohazard plastic bag upon arrival the receiving destination and disposed of in accordance with the direction from the hospital personnel.

10. 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.

11. Patient cohorting may occur if resources are exhausted and patients are grouped with same disease. Cohorting should only be utilized as a last resort.

Infection Control

NOTE: Any information obtained or exchanged regarding communicable disease exposures must be handled with strict confidentiality.

I. Standard Precautions and Body Substance Isolation (BSI)

A. 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, and breast milk.

B. Rationale: Since medical history and examination cannot reliably identify all patients infected with HIV, or other bloodborne pathogens, blood and body fluid precautions shall be consistently used for all patients. This approach, previously recommended by the CDC, shall be used in the care of all patients. This is especially important in the emergency care settings in which the risk of blood or body fluids exposure is increased and the infection status of the patient is usually unknown.

1. Standard Precautions/BSI shall be done for every patient if contact with their blood or body fluid is possible, regardless of whether a diagnosis is known or not. This includes but is not limited to starting IVs, intubation, suctioning, caring for trauma patients, or assisting with OB/GYN emergencies.

C. Procedures

1. Handwashing shall be done before and after contact with patients regardless of whether or not gloves were used. Hands contaminated with blood or body fluids shall be washed as soon as possible after the incident.
2. Nonsterile disposable gloves shall be worn if contact with blood or body fluids may occur. Gloves shall be changed in-between patients and not used repeatedly.
3. Outerwear (example: gown, Tyvek® suit, turnout gear) shall be worn if soiling clothing with blood or body fluids may occur. The protection shall be impervious to blood or body fluids particularly in the chest and arm areas.
4. Face Protection (including eye protection) shall be worn if aerosolization of blood or body fluids may occur (examples of when to wear include: suctioning, insertion of endotracheal tubes, patient who is coughing excessively and certain invasive procedures).
5. Mouth-to-mouth resuscitation: CDC recommends that EMS personnel refrain from having direct contact with patients whenever possible, and that adjunctive aids be carried and utilized. These adjunctive aids include pocket masks, face shields or use of BVM.
6. Contaminated Articles: Bag all non-disposable articles soiled with blood or body fluids and handle according to agency procedures. Wear gloves when handling soiled articles. Bloody or soiled non-disposable articles shall be decontaminated prior to being placed back into service. Refer to manufacturer's recommendations for proper cleaning and disinfecting. Non-disposable equipment shall be decontaminated appropriately prior to reusing.

Bloody or soiled disposable equipment shall be carefully bagged and discarded.

7. Drug/IV Bags shall be inspected and all contaminated waste removed prior to bag exchange. If the bag is contaminated, it must be spot cleaned or laundered prior to being placed back into service.
8. Linens soiled with blood or body fluids shall be placed in appropriately marked container. Gloves shall be worn when handling soiled linens.
9. Needles and syringes shall be disposed of in a rigid, puncture-resistant container. Any grossly contaminated container, or one that is within 1" of the top, should be disposed of appropriately.
10. 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. Wear gloves when cleaning up such spills.
11. Routine cleaning of vehicles and equipment shall be done. Cleaning and disinfecting solutions and procedures shall be developed by provider agencies following manufacturer's guidelines and CDC recommendations.

D. Respiratory Isolation

1. In the event of a suspected or confirmed TB patient, an appropriate HEPA mask must be worn, in accordance with MIOSHA regulations.
2. Decontamination of equipment and vehicle after exposure to a patient with a known or suspect respiratory route of transmission shall be carried out following manufacturer's recommendations and CDC guidelines or as described in the text Infection Control Procedures for Pre-Hospital Care Providers.

II. Radio Communications

A. Anytime the unit and/or dispatcher is made aware of the potential for any communicable disease, that information should be communicated in a format that ensures that patient confidentiality is adhered to.

III. EMS Personnel Exposure to a Communicable Disease

A. Definition of a Reportable Exposure

1. Contaminated needle or sharp instrument puncture
2. Blood/body fluid splash into mucous membrane including mouth, nose, and eye
3. Blood/body fluid splash into non-intact skin area

B. 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 the form DCH-1179(E) 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).

C. Pre-hospital Agency Responsibilities
   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.

D. 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.

E. Summary of EMS Personnel Post-Exposure Procedures
   1. Wash exposed area very well.
   2. Affected personnel may notify ED staff of potential exposure, but ED staff may choose not to test patient until potential exposure confirmed by Medical Control.
   3. Notify agency supervisor of possible exposure.
   4. Fill out form DCH-1179(E) and forward to Medical Control.
   5. Supervisor contacts Medical Control to request source patient testing.
   6. Medical Control contacts hospital personnel to request source patient testing.
   7. Provider obtains exposure evaluation and counseling.
   8. Medical Control reviews form DCH-1179(E) for completeness and forwards to hospital infection control office.
   9. Hospital infection control office returns form with tests results to EMS agency supervisor.

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. A written report describing the situation, actions taken, and description of the communication failure shall be provided to the medical control within 24 hours.

NOTE: This procedure is considered a protocol deviation and will only be used in exceptional circumstances.

Waiver of EMS Patient Side Communication Capabilities

The State of Michigan requires advanced life support (ALS) units to have the capability of communicating by radio with medical control when away from the ALS vehicle at the patient's side. This requirement may be waived when State-approved protocols permit time-dependent medical interventions to be performed without the need to obtain on-line permission from medical control. The EMS Medical Director must indicate that local state approved protocols permit these interventions to be performed without online medical control authorization either directly in protocol, or through the **Communications Failure Protocol**.

By adopting and implementing this protocol, both the medical director and alternate medical director stipulate that life-saving interventions listed in protocol are permitted to be performed by providers without on-line medical control authorization as defined by protocol.

Health Insurance Portability Accountability Act (HIPAA)

Purpose:

I. To provide a guideline 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.

Inter-facility Patient Transfers and Critical Care Patient Transports (Optional)

Purpose: The purpose of this policy is to establish a uniform procedure for inter-facility transfers.

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. If unanticipated events occur during patient transport, and contact with the transferring physician is not possible, then on-line Medical Control will serve as a safety net.
    E. It is the transferring physician's responsibility to know and understand the training and capabilities of the transporting EMS personnel.

2. Transportation
    A. Pre-transport
        a. Care initiated by the transferring facility may need to be continued during transport. The transferring physician will determine the method and level of transport and any additional treatment(s), if any, that will be provided during the course of transport.
        b. Orders for treatment, including medications for ALS transfers, or other orders shall be provided in writing to the EMS personnel prior to initiation of the transport by the transferring Physician.
        c. For ALS transfers, ordered medications not contained within the EMS System Medication Box/Bag must be supplied by the transferring hospital.
        d. EMS personnel must be trained in all the equipment being used in the patient's care or appropriately trained staff must accompany the patient.
        e. Should the patient require care and/or equipment above and beyond the normal scope of practice and training of the EMS personnel, the transferring facility shall provide appropriate staff or consider other appropriate means of medical transportation.
        f. The paramedic has the right to decline transport if he/she is convinced patient care is outside their scope of practice and training or, alternatively, to insist a hospital staff member accompany them on the transfer or consider other appropriate means of medical transportation.
        g. If additional staff accompanies the patient, the transferring physician is responsible for ensuring their qualifications. This staff will render care to the patient under the orders of the transferring physician. It will be the

responsibility of the transferring facility to provide arrangements for the return of staff, equipment, and medications.

h. 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. 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 en route, and who performed them, will be documented on the patient care record.
    d. In the event that a patient's condition warrants intervention beyond the written Physician orders provided by the transferring Physician, the EMS personnel will contact the transferring Physician. If that is not possible, the EMS personnel will follow local Medical Control Protocols and initiate contact with the on-line Medical Control Physician from either the sending or receiving facility or, if not able to contact those facilities, the closest appropriate on-line Medical Control facility.

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**)

Critical Care Patient Inter-Facility Transport (OPTIONAL) Additional Requirements

Purpose: To provide hospital facilities, physicians, and medical transport personnel with guidelines to facilitate inter-facility transportation of critically sick and injured patients within Advanced Life Support vehicles.

1. Vehicle and Staffing Policy
    A. MDHHS Vehicle License. All vehicles conducting Critical Care Inter-Facility Patient Transports must be licensed as transporting Advanced Life Support (ALS) vehicles.
    B. Equipment. The following is the minimum equipment that will be carried by an ALS vehicle while it is providing Critical Care Inter-Facility Patient Transport, in addition to the equipment required by Part 209, P.A. 368 of 1978, as amended, and local medical control authority protocols:
        a. Waveform Capnography
        b. Portable Ventilator or staff capable of providing ventilatory support
        c. Portable Infusion Pump(s)
        d. Pressure infusion bag(s)

    C. Staffing
        e. All ALS vehicles that conduct Critical Care Inter-Facility Patient Transports will be staffed in accordance with local medical control requirements with at least one (1) paramedic trained in the Critical Care Inter-Facility Patient Transport curriculum. The trained paramedic must be in the patient compartment while transporting the patient.
        f. The above requirement for staffing does not apply to the transportation of a patient by an ambulance if the patient is accompanied in the patient compartment of the ambulance by an appropriately licensed health professional designated by a physician and after a physician-patient relationship has been established as prescribed. (PA 368, Section 20921(5)).

2. Critical Care Inter-Facility Patient Transport Physician Director/Quality Improvement
    A. Ambulance services that utilize this protocol must designate a Critical Care Inter-Facility Patient Transport Physician Director.
    B. The Critical Care Inter-Facility Patient Transport Physician Director will be responsible for:
        a. Oversight of a quality improvement program for Critical Care Inter-Facility Patient Transports
        b. Oversight of the training curriculum for EMS personnel trained under this protocol.
3. Critical Care Inter-Facility Patient Transport Curriculum

CRITICAL CARE PATIENT INTER-FACILITY TRANSPORT CURRICULUM

COURSE OUTLINE

1. Ventilator patient concerns (4 hours total)
    A. Types of ventilators
    B. IPPB, SIMV, PEEP, CPAP
    C. Use of transport ventilators
    D. Complications
    E. Use of Pulse Oximeter/Capnography
2. Chest Tubes and Pleurovac (1 hour)

    A. Principles of pleural cavity evacuation
    B. Maintaining chest tubes
    C. Review various systems
    D. Pleurovac Practical Lab
3. Maintenance of invasive lines (2 hours)
    A. Types of hemodynamic monitoring
        a. Various equipment
        b. Insertion sites
        c. Maintaining infusions
        d. Complications
4. Equipment Training Videos (1 hour)
    A. IV Pumps
    B. Ventilator
    C. 12 Lead Monitoring
5. Thrombolytics (1 hour)
    A. Indications, contraindications, adverse effects, and administration
        a. Streptokinase
        b. tPA
        c. Retavase
        d. TNKase
        e. Heparin
        f. Lovenox
6. Interpreting blood gases (1 hour)
    A. The use of ABGs in ventilator managements
7. Blood products (1 hour)
    A. Whole blood/Packed RBCs/Plasma
8. Cardiac Enzymes (1 hour)
    A. Cardiac physiology and the meaning of enzyme abnormalities
9. Vasoactive drugs (2 hours)
    A. Indications, contraindications, adverse effects, and administration
        a. Dopamine
        b. Epinephrine
        c. Dobutamine
        d. Levophed
        e. Amrinone/Milrinone
        f. Nitroglycerin
        g. Nitroprusside

h. Esmolol
i. Labetalol

10. Critical Care Patient Transport Protocol Review (1 hour)
    A. Protocol review and miscellaneous drugs
        a. Indications, contraindications, adverse effects, and administration
            1. Aminophylline
            2. Mannitol
            3. Phenytoin
            4. Insulin
            5. Propofol
            6. Oxytocin and related drugs
11. Paralytics (1 hour)
    A. Indications, contraindications, adverse effects, and administration
        a. Non-depolarizing neuromuscular blockers
        b. Sedatives during paralytic maintenance
        c. RSI indications during critical care patient transport
    B. Administer with Medical Control
12. Practical Lab (1 hour)
    A. IV Pumps
        a. Various tubing
        b. Maintaining a drip while changing to the pump
    B. Ventilator
    C. 12 Lead
    D. CO2 detector
13. Cardiac Physiology/12-Lead ECG (4 hours)
    A. Cardiac physiology and cardiac drug review
        a. Indications, contraindications, adverse effects, and administration
            1. Lidocaine/Procainamide
            2. Potassium
            3. Morphine
            4. Cardizem
            5. Amiodarone
14. 12-Lead AMI Recognition (2 hours)
15. High Risk Pregnancy (1 hour)
    A. Indications, contraindications, adverse effects, and administration
        a. Magnesium Sulfate
        b. Pitocin
16. Antibiotics (1 hour)
17. Pediatrics (4 hours)
    A. Pediatric Airway and Ventilation management including Ventilator Dynamics and Chest Tube Monitoring and pneumothorax recognition and treatment (1 hour)
    B. Pediatric fluid requirements including maintenance and bolus therapies (1 hour)
    C. Pain management (1 hour)
    D. Case studies, trauma specific (1 hour)
18. Critical Care Patient Transport Charting (1 hour)
19. Critical Care Patient Transport Call: Start to Finish (1 hour)
    A. General considerations
    B. Staffing and quality management considerations
    C. When to refuse a call

20. Critical Care Patient Transport Case Presentations (1 hour)
21. Daily Quizzes
    A. Ventilators, chest tubes, invasive lines
    B. Thrombolytics, ABGs, blood, enzymes, pressers, paralytics
22. Written and Practical Exam (4 hours)

Interfacility Patient Transfers – WMRMCC Addendum

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X	*X*		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

The purpose of this protocol addendum is to expand the Scope of Practice for ALS EMS providers in the performance of Interfacility Patient Transfers through the requirement of additional education and training. This addendum modifies the current state Interfacility Patient Transfer Protocol.

A. Training:
Only personnel trained under an approved WMRMCC Expanded Scope curriculum may utilize the listed medications or procedures included in this addendum.

B. Procedure:

1. The following medications/fluids (to a maximum of two simultaneously) may be continued during transport by MCA approved ALS personnel. These medications may require the use of an IV infusion pump which will be supplied by the sending facility or the ALS provider. The medications may be monitored by the attending paramedic only and may NOT be titrated or started as a new infusion. Should complications arise, infusions must be discontinued and medical control contacted. Paramedics must receive training in the use of these medications:
    a. Amiodarone
    b. Antibiotics
    c. Antifungals
    d. Antivirals
    e. Beta Blockers
    f. Blood – See **Blood** Protocol
    g. Calcium Channel blockers
    h. Colloids, crystalloids, lipids
    i. Glycoprotein IIa/IIIb Inhibitors
    j. Heparin
    k. Insulin pumps (closed systems)
    l. Lidocaine
    m. Magnesium sulfate/Calcium gluconate
    n. Nexium (esomeprazole) and Protonix (pantoprazole)
    o. Nitroglycerine
    p. Nitroprusside
    q. Oxytocin (Pitocin)
    r. PCA Pumps (closed systems with approved or protocol medications)
    s. Pepcid (famotidine) and Zantac (ranitidine)
    t. Potassium (up to 20 mEq)
    u. Sodium Bicarbonate
    v. TPN (Total Parenteral Nutrition)
    w. Tranexamic Acid (TXA)

2. Medications used from an ALS medication bag will be recorded by the paramedic, per the appropriate medication usage form. Upon arrival at the receiving facility the medication box will be exchanged per protocol. If the receiving facility is outside the West Michigan Regional Drug Bag Exchange program participation area, replacement of the medication box is the responsibility of the sending facility.

3. EMS documentation of the interfacility transfer must include the interventions performed enroute and documentation of personnel involved in specific patient care activities.

C. Permissible Skills:

MCA's shall designate which of the procedures are permissible within their MCA by listing the designator [C, P, S, T, V] under their MCA name. Those which have not approved any of the additional skills will have "None" listed. Those which are blank are not covered under this section.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
C, P, T	*C, P, T, S, V*		*C, P, S, T, V*		*C*	*C, P, S, T, V*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
C, P, S, T, V	*C, P, V*	*C, P, S, T, V*	*C, P, S, T, V*	*C, P, S, T, V*	*C, P, S, V*	

Chest Tubes/Chest Drainage Units: [C]
Paramedics in the participating medical control authority may monitor an existing chest tube during transport. The chest tube shall be placed by the sending facility and any necessary equipment will be provided by the sending facility.

Pressors: [P]
Paramedics in the participating medical control authority may maintain an existing infusion of a pressor medication. Any pressor infusion must be delivered via an IV pump. Agencies and sending facilities should collaborate with regards to equipment necessary for maintenance of pressor infusions. Paramedics may titrate pressor medications based on the parameters in written orders obtained from the sending facility.

tPA: [T]
Paramedics in the participating medical control authority may transport patients receiving tPA, Tissue Plasminogen Activator (Alteplase, Activase), in the presence of acute ischemic stroke, myocardial infarction, pulmonary embolism, central venous catheter occlusion, arterial thrombus or embolism, or other medical indication. In long transports where tPA dosing changes, transition between hospital premixed bags may be performed in transit with written orders, and medication cross check prior to departure from the facility. Agencies and sending facilities should collaborate with regard to equipment necessary for continuation of tPA therapy.

Paralytics/Sedatives: [S]
Paramedics may, to properly manage the mechanically ventilated patient, titrate sedative medications based on the parameters in written orders obtained from the sending facility, and may maintain paralytics as ordered. Agencies and sending facilities should collaborate with regards to equipment necessary for administration of medication infusions.

Ventilators: [V]
Paramedics in the participating medical control authority may maintain, and adjust mechanical ventilation as ordered by a sending facility. Supply of a mechanical ventilator (agency-owned vs. hospital-owned) shall be determined by the medical control authority.

D. Critical Care Transport (Optional):

The WMRMCC adopts the state optional CCT sections with the following changes:
"3. *Critical Care Interfacility Patient Transport Curriculum"*
The UMBC and Iowa CCT programs are considered to be acceptable CCT training standards; any other curriculum must exceed the state minimum and be approved by the WMRMCC Medical Directors in advance of training or implementation.

Definition: A Critical Care transport is defined as the transport of any patient who requires treatment above or beyond the scope of practice or standardized paramedic training, or a paramedic with expanded scope education, respectively.

E. Categories of Interfacility Transfers

Category 1 – Requires a Critical Care Paramedic and, at the CCP's discretion, additional staff may be required.
Category 2 – EPIC Trained Paramedic
Category 3 – Standard ALS level paramedic
Category 4 – Standard BLS level EMT

Category 1 Situations:

- For all situations in which necessary care is not included in the scope of practice for a standard BLS, ALS or EPIC trained provider, a Critical Care Paramedic is required, or appropriate hospital clinical staff must accompany the EMS providers. Exceeding the scope of practice includes equipment or medications not included in standard patient care protocols or the EPIC protocol.
- Ventilators:
  - If the provider is expected to adjust settings based upon patient changes to settings
  - If the patient requires frequent settings changes to maintain effective oxygenation or ventilation
- Pressors:
  - If the provider is expected to titrate a pressor to effect
- High Risk OB:
  - If the patient is reasonably expected to deliver enroute
  - If the patient were to deliver enroute and the infant and mother both experienced complications, would there be sufficient resources to treat both patients – send additional staff with CCP.
  - If mother is not expected to deliver but there is high risk of maternal complications
- Stability:
  - If a patient is critically unstable, such that more than one provider is needed to effectively treat the patient during transport – send additional staff with the CCP
  - If a patient is unstable, such that medications not included in the EPIC list, or two or more medications form the EPIC list are being sent, and the patient is on two or more pieces of equipment (one pump and vent), then CCP required. Consider additional personnel.

Category 2 Situations:

- EPIC providers are expected to be used for relatively stable and imminently stable patients in which interventions are expected to be uneventful

- Ventilators: If approved by MCA, if the provider is maintaining preset ventilator settings or is making predefined changes directed by a hospital

- Pressors: If approved by MCA, if the provider is maintaining a pressor medication at a preset rate or

making predefined changes directed by a hospital

- High-Risk OB: If the patient is relatively stable and delivery is not expected enroute. If delivery is expected and the patient is stable, the EPIC medic may transport if additional clinical personnel are sent along.

- Stability: If the patient is relatively stable, such that only two (or fewer) of the EPIC approved medications and two (or fewer) pieces of equipment are necessary

Category 3 Situations

- Standard ALS level personnel may transport interfacility transfers in which the care falls within the scope of a standard paramedic.
- Ventilators: Not Permitted
- Pumps: If pumps are carried on the ambulances and are used routinely and approved by Medical Control. Otherwise not permitted. Medications may be bolused prior to transport, when clinically appropriate, in order to facilitate prompt transport.
- High-risk OB: not permitted.
- Stability:
    - Unstable patients may be transported with additional appropriate clinical staff.
    - Relatively stable and imminently stable patients receiving only medications included in standard EMS treatment protocols

Licensure Level Requirement of Attendant during Transport (Optional)

☑ Medical Control Authorities choosing to adopt this protocol may do so by selecting this check box.

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.

   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.

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 patient care record.
   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. Optional Training Standards: mark and specify as applicable

- [x] Written Exam - MCA Optional
- [ ] Pre-hospital Trauma Certification (PHTLS, ITLS, FTC)
- [x] Practical Competency (EMT Skills)

Optional PHTLS, ITLS Successful Completion of FTO program Attend any mandatory system in service or skills stations

- [x] Practical Competency (Specialist Skills) - MCA Optional

Optional PHTLS, ITLS Successful Completion of FTO program Attend any mandatory system in service or skills stations

- [x] Advanced Cardiac Life Support (ACLS)
- [x] Pre-hospital Pediatric Certification (PALS, PEPP, or EPC)
- [x] Practical Competency (Paramedic Skills) - MCA Optional

Optional PHTLS, ITLS Successful Completion of FTO program Written Exam Attend any mandatory system in service or skills stations

- [ ]
- [ ]

MCA Name: West Michigan Regional Medical Control Consortium
MCA Board Approval Date: 04/09/2018
MCA Implementation Date: 07/01/2018
Protocol Source/References:

IV. 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).

MCA Privileges Policy - Addendum

Purpose: To further expound upon or define state protocol as implemented among the West Michigan Regional Medical Control Consortium (WMRMCC) partner Medical Control Authorities

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

A. The WMRMCC is adopting the state MCA Privileges Policy with the following changes:

1. Item III. Optional Training standards, "Prehospital Trauma Certification" includes only ITLS and PHTLS as approved trauma training programs.
   a. Trauma training programs are optional, by MCA, for BLS level providers
   b. Trauma training programs are required for Specialist and Advanced level providers
2. Successful completion of agency run Field Training Program is required of all levels.
3. Attendance at any mandatory system in-service or skills stations is required of all levels.
4. MCA's may opt to require practical skills evaluation as an agency or provider standard
5. For pediatric credential currency, Emergency Pediatric Care (EPC) is permitted in addition to PALS and PEPP.

B. The WMRMCC is adding the following standards:

1. Provisional Status
   a. The minimum standard for an individual to be granted provisional MCA privileges is possession of a current and valid State of Michigan EMS license and MCA approval. The MCA may grant provisional privileges to an individual for 120 days, during which time the requisite certifications must be obtained. The Medical Director may extend provisional status in extenuating circumstances.
   b. The MCA reserves the right to withhold the offer of MCA privileges when there is valid cause, unresolved PSRO or legal issues within another MCA or state, or if there are any prior documented concerns within that MCA.
   c. Agencies must notify the MCA of newly hired EMS providers through the MCA required mechanism. Providers may not provide patient care until approval from the MCA is received at the agency.
   d. Either agencies shall provide, or the individual provider shall permit, a background check to include, at minimum, a check of the sexual offender registry and a criminal background. Positive results must be provided to the MCA and explicit approval must be received prior to the individual having contact with patients.
   e. While in a provisional status, providers are only permitted to participate in patient care with direct supervision by a field training officer of equal or higher licensure, agency supervisor or, with prior medical director approval, an approved senior level provider.

f. Failure of an individual in provisional status to adhere to protocols, not possessing a valid Michigan EMS license, adverse criminal history, or misconduct while in provisional status may result in revocation of the provisional status.
g. Failure of an agency to properly supervise an individual with provisional status may result in denial of provisional status for its employees thereafter.

2. Maintaining MCA Privileges
   a. Providers in the MCA have the individual responsibility to maintain currency of all required credentials.
   b. Upon expiration of a required license or credential, the individual immediately loses privileges to practice within the MCA. Failure to maintain credentials may also result in further suspension of privileges by the MCA. MCA's may, at their discretion, offer extension tests for credentials.
   c. Practicing without required credentials is considered to be a level 1 infraction.
   d. Grace periods for credentials, even if offered by the credential issuing agency, are not considered to be valid within the MCA. The listed expiration date is considered to be a hard date.
   e. Providers will have no more than 90 days, following an expiration, to become complaint; thereafter the individual will need to reapply for MCA privileges.
   f. MCA privileges will lapse if an individual provider is not actively practicing within the MCA for 6 consecutive months.

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 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, as defined by Part 209 of P.A. 368 of 1978, as amended, that are up-to-date, 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 if not included in routine EMS education.
   D. 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.

II. Responsibilities of Participating Hospitals Providing On-Line Medical Direction
   A. A hospital within the Medical Control Authority system providing on-line medical direction to EMS providers will assure that any physician designee providing such direction is properly trained and qualified and abide by Medical Control Authority protocols.
   B. Each hospital 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 will promptly inform their Emergency Department physicians and staff of Medical Control Authority policy and protocol changes.

III. Responsibilities of EMS Agencies
   A. Agencies will operate under the Medical Control Authority and comply with Division approved protocols.
   B. Only persons currently authorized to do so by the Medical Control Authority will provide pre-hospital patient care. Each EMS agency will assure that their personnel have current training and certifications as required by protocol.

C. The Medical Control Authority will be immediately notified if an EMS agency is unable to provide staffing at the level required by its State license.
D. 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.
E. EMS agencies will promptly inform their EMS personnel of Medical Control Authority policy and protocol changes.
F. EMS agencies will provide an annual listing of EMS personnel upon request of the Medical Control Authority. This listing shall note the license and Medical Control Authority authorization status of each individual.
G. 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.

IV. Accountability

A. The State of Michigan, Department of Health and Human Services, Division of EMS and Trauma, designated the Medical Control Authority for a specific region. As such, the Medical Control Authority is accountable to that agency in the performance of its duties.
B. The hospitals within the Medical Control Authority system collectively administer this Medical Control Authority. Each individual hospital 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 to provide on-line medical direction.
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.

Physician on Scene

Purpose: To provide a process for interaction between EMS personnel and physicians at the scene of a medical emergency.

I. Responsibility of Medical Control
   A. "When a life support agency is present at the scene of the emergency, authority for the management of an emergency patient in an emergency is vested in the physician responsible for medical control until that physician relinquishes management of the patient to a licensed physician at the scene of the emergency". MCL 333.20967

   B. The EMS provider is responsible for management of the patient and acts as the agent of the medical control physician.

II. Patient Management in the Presence of an On Scene Physician
   A. The EMS provider may accept assistance and/or advice of the on-scene physician provided they are consistent with medical control protocols. The assistance of an on-scene physician may be provided without accepting full responsibility for patient care, as long as there is ongoing communications and approval by the medical control physician. The medical control physician may relinquish control of the patient to the on-scene physician provided the on-scene physician agrees to accept full responsibility for the patient. Full responsibility includes accompanying the patient to the hospital and completing a patient care record. The EMS personnel should encourage the on-scene physician to communicate with the on-line medical control physician.

   B. The medical control physician may reassume responsibility of the patient at their discretion at any time.

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 must be reported to medical control.

IV. All deviations will be reviewed within the medical control quality improvement program.

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. In any situation in which the scene is not secured, EMS personnel ARE NOT TO ENTER THE SCENE until it has been secured by the appropriate agency.
   A. When responding to an unsecured scene, EMS personnel will stage an appropriate distance away from the scene to protect themselves from danger.

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/or 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 **Contaminated Patient Procedure**

Determination of Death, Death in an Ambulance and Transport of a Body

The intent of this policy is to establish standards for Determination of Death, when patients with Do-Not-Resuscitate (DNR) orders die in an ambulance, or care is terminated for a patient while in the ambulance.

I. Pronouncement/Determination of Death

A. Per the Determination of Death Act (Act 90 of 1992, MCL 333.1033), the MCA may establish which of its medical personnel may pronounce death.[1] Per this policy, paramedics holding MCA privileges, while on duty with a licensed ALS life support agency, with primary or secondary operations within this MCA or while providing mutual aid within this MCA, may pronounce the death of a patient who meets the following criteria:

1. Irreversible cessation of circulatory and respiratory functions
   a) Irreversible cessation of circulatory and respiratory functions is implied when a patient has experienced cardiac arrest and a valid DNR is in place, such that no attempt will be made to reestablish either circulation or respiratory functions.
   b) Irreversible cessation of circulatory and respiratory functions is also implied when a patient meets the criteria established under the **Dead on Scene protocol** or the termination criteria are met under the **Termination of Resuscitation Protocol**.

B. Contact with on-line medical control for the purpose of determination of death or pronouncement is not necessary unless expressly stated in the enabling protocol.

C. Contact with Dispatch for the purposes of recording the death is required.

II. 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 county or city jail.

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.

[1] MCL 333.1033 (3) A physician or registered nurse may pronounce the death of a person in accordance with this act. This subsection does not prohibit a health facility or agency licensed under article 17 of the public health code, Act No. 368 of the Public Acts of 1978, being sections 333.20101 to 333.22260 of the Michigan Compiled Laws, from determining which of its medical personnel may pronounce the death of a person in that health facility or agency.

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)

III. 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 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 only after approval from the ME's office to EMS. 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 in the physical custody of the police or EMS until custody is transferred to the funeral home or the ME's office staff.

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 of 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. Police may choose to photograph or document the placement of medical devices, medical equipment, etc. in suspicious situations, prior to their movement or removal.

H. No personal items should be removed from the body with the exception of identification.

I. Bodies may be covered with a burn sheet or other sheet which does not shed fibers.

J. 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.

K. Bodies must be handled with care and respect for the deceased, the family and the public.

IV. 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.

V. Death in an Ambulance – transportation of patient's 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 V.B (1 and 2) above.

Safe Delivery of Newborns

Purpose

According to Public Act 488 of 2006 and Public Acts 232, 233, 234, and 235 or 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: 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. 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.
3. The firefighter, police officer, paramedic or EMT personnel cannot refuse to accept the infant and must place the infant under temporary protective custody.
4. 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.
        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**

5. 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
6. 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).
7. Fire and Police will 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.
8. Paramedics and EMT responding to a 9-1-1 emergency call will transport newborn to hospital, 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.

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?

- Unharmed 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:
  1. A written statement of the parent's rights following surrender of the infant.
  2. 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 initated 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.

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		Yes	No	
Sickle Cell Disease	☐	☐	Cancer	☐	☐	If Yes Type
Heart Disease	☐	☐	Genetic Disease	☐	☐	If Yes Type
Diabetes	☐	☐	Family History of Mental Illness	☐	☐	If Yes Explain
HIV	☐	☐	Drug Usage	☐	☐	If Yes Explain
Hepatitis	☐	☐	Alcohol Usage	☐	☐	If Yes Explain

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		Yes	No	
Sickle Cell Disease	☐	☐	Cancer	☐	☐	If Yes Type
Heart Disease	☐	☐	Genetic Disease	☐	☐	If Yes Type
Diabetes	☐	☐	Family History of Mental Illness	☐	☐	If Yes Explain
HIV	☐	☐	Drug Usage	☐	☐	If Yes Explain
Hepatitis	☐	☐	Alcohol Usage	☐	☐	If Yes Explain

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

DHS-4819 (Rev. 4-11) Previous edition obsolete. MS Word 1

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

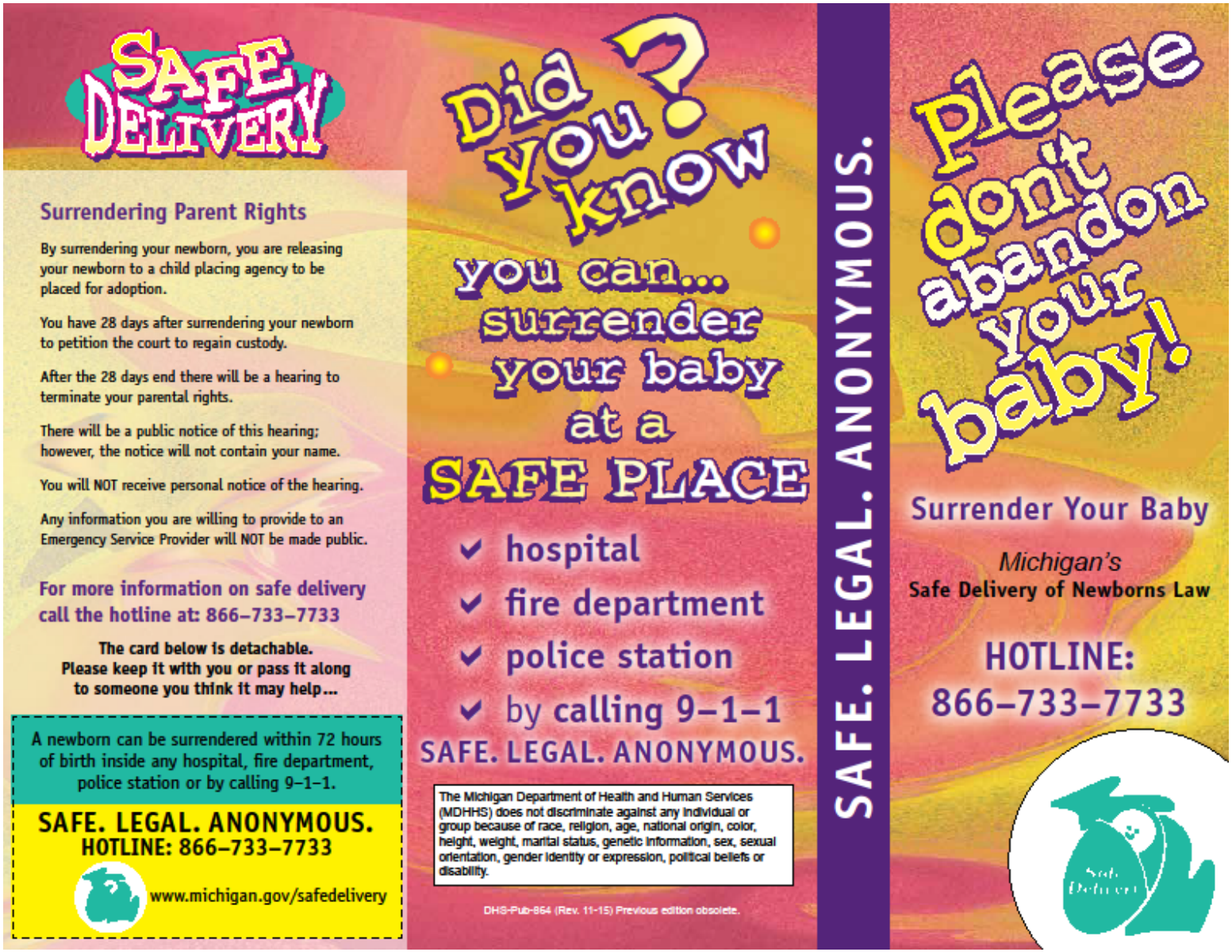
Subscribed and sworn to before me on _____, _____
Date County and State

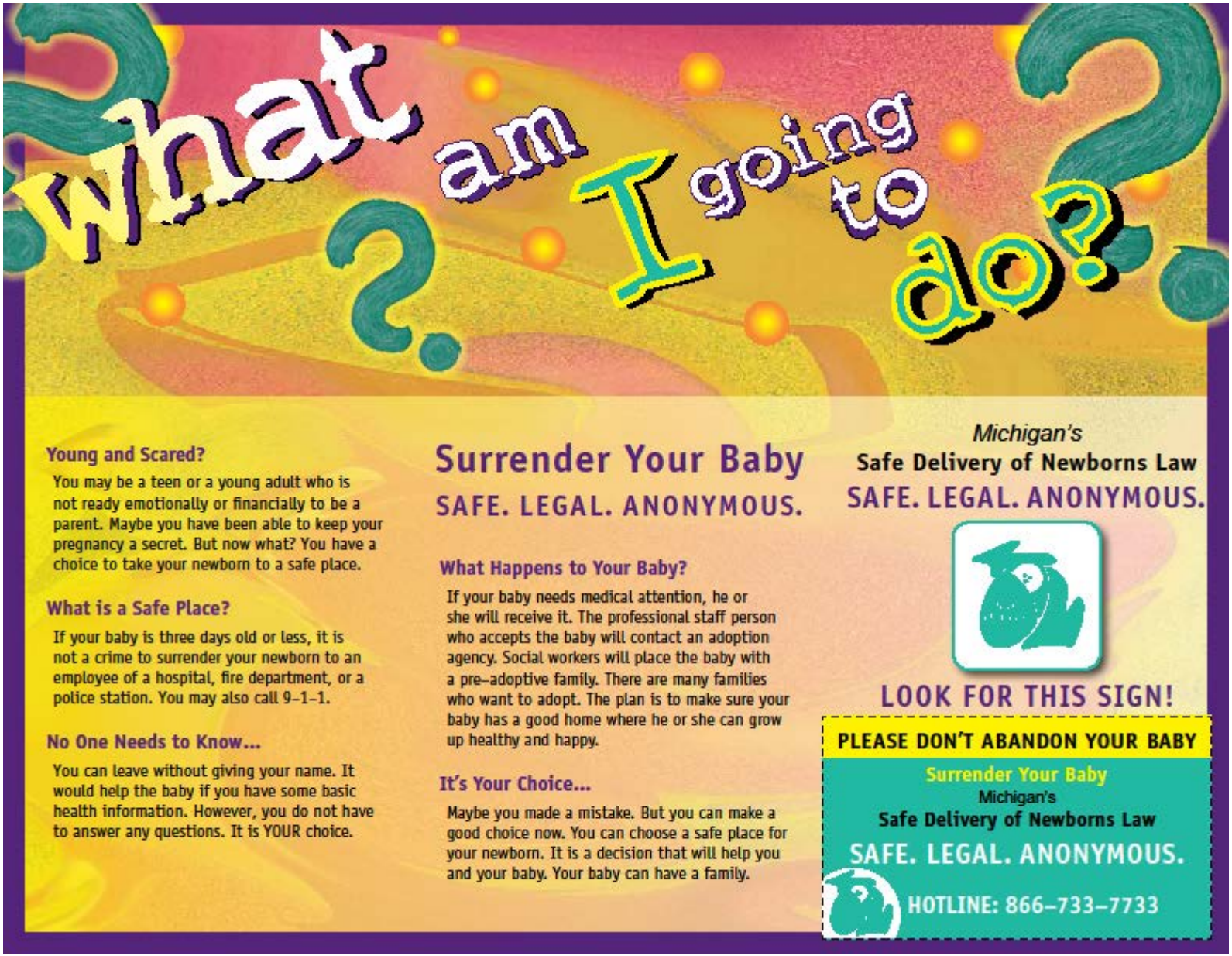
My commission expires: _____ Signature: _____
Date

_____
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


SAFE DELIVERY
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

Complaint Investigation & Resolution

Purpose: This policy is provided as a means to receive, investigate, and resolve complaints regarding licensees falling under the purview of the Medical Control Authority (MCA).

I. Definitions:
   A. Complaint
      For the purpose of this policy, a complaint shall be defined as any notification of dissatisfaction or concern regarding medical care rendered by a MCA licensed EMS provider/agency, or any issues that involve the performance of the EMS system in whole or in part.
   B. Privileged Documents
      Privileged documents are those which are collected by the Professional Standards Review Organization (PSRO) of the MCA.
   C. Formal Inquiry
      Formal inquiry means that a complaint has been found to either be valid, or that more detailed inquiry is necessary to determine the validity of the complaint; either of which will require that the subject licensee (individual/agency) be notified of the specific complaint. A formal inquiry may involve the gathering of incident reports which provide explanations for care rendered or justification for actions, as well as subject/witness interviews. Some information gathering may not necessitate a formal inquiry.
   D. Sentinel Event
      A sentinel event is any complaint which involves at least one single level I infraction, a violation of Michigan or Federal laws, EMS rules, or 2 or more level II infractions, as described in the Medical Incident Review and Corrective Action Policy. Refer to **Incident Classification Protocol**.
   E. Licensee
      A licensee is defined as an individual or an agency (fire department, rescue squad, life support agency, etc.) holding a valid State of Michigan Medical First Responder, Emergency Medical Technician, Specialist, Paramedic, or agency licensed to operate within the Medical Control Authority service area. Said individual licensee shall be an employee of a provider licensed to operate within the Medical Control Authority.

II. Professional Standards Review Organization of the MCA
   A. The medical control authority shall establish a PSRO to perform its duties and functions related to complaints, investigations or quality improvement activities, both prospective and retrospective.

B. 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.[1]

III. Complaints Which Will be Considered

All complaints, in order to be considered for action by the MCA, shall meet the following criteria:

A. A complaint may be submitted either verbally or in writing. Hearsay or "second hand" complaints may not be accepted or investigated by the MCA.

B. The complainant must provide the MCA with his/her name, address, and telephone number. A request for anonymity by a complainant shall be honored by the MCA to the extent possible.

C. The complaint must be directed toward a licensee (individual or agency) within the MCA.

IV. Complaints That May Not Be Considered

Complaints regarding conduct of a licensee, exclusive of medical practice or actions bearing upon medical practice, shall be referred to the employer of the individual. These complaints may also be referred to the PSRO for investigation at the discretion of the MCA.

V. Complaint Delegation

A. Complaints directed toward an individual acting while employed by an agency outside of the jurisdiction of the MCA shall not be accepted or investigated but will be forwarded, or the complainant directed to, the MCA/agency under whose jurisdiction it does fall.

B. MCAs may cooperate on investigations which overlap jurisdictional boundaries. For the purposes of remediation or discipline, the MCA granting Medical Control to the provider or agency where the primary action or actions being investigated took place shall be considered the jurisdictional MCA.

C. Complaints more appropriately investigated at the agency or operational level may be turned over to the life support agency or hospital involved. Investigation results should be reported to the MCA.

VI. Receipt of Complaints

Complaints may be received at the MCA directly, at life support agencies or by individuals. Those in receipt of a complaint which involves violations of protocols,

[1] MCL §331.531, (Et Seq.)

statutes, or administrative rules shall inform the MCA. The MCA will determine if further investigation is necessary.

The complainant for a case should be asked if they would like to be contacted by the agency/individual that is the subject of the complaint. This will allow the complainant the opportunity to voice a request to remain anonymous or to allow their information to be provided to the subject of the complaint.

VII. Investigation of Complaints

Once a complaint is received by the MCA, the complaint will be assigned to the PSRO. The person(s) charged with complaint investigation will gather information to determine the validity of the complaint and, if valid, will communicate with the employing agency of the subject(s) involved in the complaint. The PSRO may request copies of documents, incident reports, video and audio recordings relating to a complaint without formal notification of the complaint to the subject licensee. All requests for information will be documented in the investigation notes or with attached documentation/emails.

Formal notification of the subject licensee will occur if MCA disciplinary actions or formal inquiry are indicated. A copy of the initial complaint, or a complaint summary (if the initial complainant requested anonymity), may be provided upon request.

VIII.Documentation

The documentation of the investigation of a complaint may include, but is not limited to, the following:

A. The name, address, and telephone number of the complainant (if known)
B. A copy of the stated complaint
C. The date and time of the receipt of the complaint
D. A copy of the complaint acknowledgement, if appropriate.
E. A copy of the notice to the subject licensee, if appropriate.
F. A copy of the pertinent protocol(s) and/or policy/policies.
G. Written statements of witnesses including notes from telephone interviews
H. Copies of pertinent reports, transcriptions of audio tapes; video recordings and copies of other pertinent documents or emails.

IX. General Complaint Review

The complaint review process will first seek to identify the validity of each complaint. Complaints found to be invalid will be closed as unsubstantiated; notification to the individual or the agency of the closure will only occur if prior knowledge of the complaint was provided to, or exists with, the involved individual/agency.

Complaints found to be valid, but of a minor or less severe nature may be handled in

cooperation with the agency's quality improvement personnel or management. These incidents may involve education and remediation but may not involve suspension, limitation or revocation of the individual's or agency's privileges to function in the MCA area.

X. Sentinel Event Complaint Review

A sentinel event complaint shall be reviewed by the PSRO at a special meeting called for that purpose. Prior to a review meeting, the subject licensee shall be provided with copies of all documentation gathered regarding the complaint with the exception of any documents that would reveal the identity of an individual who requested anonymity. The licensee will be informed if documents are withheld or summarized to maintain the anonymity of an individual.

The subject licensee (individual/agency) may request a postponement, of up to thirty (30) days, of a special meeting in order to prepare his/her/their response to the complaint. The subject individual/agency must submit copies of all supporting documentation to the PSRO at least one week prior to the review meeting.

A. Attorneys and Union representatives are not permitted in PSRO case reviews without prior expressed permission of the MCA.
B. A subject licensee may bring a representative of their life support agency, such that the agency may provide guidance for the individual, and so the agency may fairly represent themselves and their policies.
C. The following steps shall be taken in the complaint review process:
    1. The violation of policy or protocol shall be defined.
    2. The impact on patient outcome will be evaluated.
    3. The subject licensee shall be given time to speak on the issue of the complaint including the opportunity to present supporting documentation.
    4. Counseling, remedial, and/or disciplinary action shall be considered and/or ordered as deemed appropriate by a majority vote of the MCA or their designated and pre-established Professional Standards Review Organization/Quality Review Committee.
D. The complainant shall, to the extent allowed under confidentiality statutes, be notified of the outcome of the complaint review process. The employer shall be notified if one of their employees has their privileges suspended or revoked.
E. If the MCA has enacted a temporary suspension, in accord with the Due Process and Disciplinary Action Policy, and the subject licensee requests a 30-day postponement, the suspension of privileges to function shall remain in place during the postponement.

F. The PSRO shall remove all the names and addresses of patients from the record before the review entity releases or publishes a record of its proceedings, or its reports, findings, and conclusions.[2]

[2] MCL 331.533

Disciplinary Action Appeal

Purpose: This protocol is provided to define the steps a licensee must take to appeal an order of disciplinary action issued by the Medical Control Authority.

I. Procedure
   A. A licensee having received an Order for Disciplinary Action (ODA) from the Medical Control Authority (MCA) may initiate a Request to Appeal.
   B. A licensee shall notify the MCA within seven (7) days of receipt of notice of an ODA of his/her/their request to Appeal. Such notice shall be in writing.

II. Appeal Hearing
   A. Upon receipt of a Request to Appeal an ODA, the MCA shall schedule a special meeting for the purpose of hearing an appeal. This meeting shall be scheduled as soon as practicable following receipt of a Request to Appeal.
   B. The receipt of a Request to Appeal does not stay the ODA or the imposition of the discipline on the appellant licensee.
   C. The MCA shall honor a request to postpone an appeal hearing, no later than thirty (30) days past the originally scheduled hearing date, to allow the appellant licensee opportunity to assemble information bearing upon his/her/their appeal.
   D. The MCA shall hold an appeal hearing to review the appellant licensee's new information and exercise one of the following options:
      1. Uphold the original decision and subsequent ODA.
      2. Diminish the ODA to a lesser Disciplinary Action (i.e., suspension of privileges diminished to written reprimand).
      3. Revoke the ODA (revocation of an ODA shall not expunge the appellant's record of the complaint process records for a period to twelve (12) months from date of original incident).
   E. Following exhaustion of the procedure stated herein, an appellant 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). An appeal must be filed with the Department of Health and Human Services, in writing, no more than 30 calendar days following notification of the final determination by the MCA.
      1. If a decision of the MCA is appealed to the Emergency Medical Services Coordination Committee, the MCA shall make available, in writing, the information it considered in makings its decision.

III. Appeal Hearing for an Immediate Threat
If the MCA determines that an immediate threat to the public health, safety, or welfare exists, appropriate action to remove medical control privileges can be taken immediately until the MCA has had the opportunity to review the matter at a MCA hearing. The hearing shall be held within 3 business days after the MCA's (or Medical Director's) determination to remove medical control.

Due Process & Disciplinary Procedures

Purpose: To establish a fair and equitable method of applying remediation and/or discipline to licensees found to be violation of protocol.

I. Due Process

The **Complaint Investigation & Resolution Policy** establishes the initial steps of Due Process. Under that policy, a complaint will be investigated for validity and severity. Both individuals and agencies shall be notified of formal or sentinel reviews.

A. The MCA will provide at least 4 business days' notice to affected providers and agencies prior to convening a special PSRO meeting.

B. Subjects of a complaint will be provided with copies of all, complaint/investigation related materials at the time of a special meeting with the exception of materials that would reveal the identity of an individual that provided information under the condition of anonymity. The subject individual or agency may request the complaint/investigation related materials in advance of the special meeting.

C. Any MCA suspension enacted as a measure to ensure the safety of the community or patients shall remain in effect pending sentinel event review and disposition.

D. In the event of criminal charges being filed against a provider or agency related to acts of violence, diversion of medications, illegal possession of controlled substances, criminal sexual conduct, or other practice which may pose a threat to the community or patients, the MCA may act with suspension of MCA privileges without convening a special PSRO meeting.

1. The individual or agency shall be notified of the suspension per the **Disciplinary Action and Appeal Policy**.
2. If found guilty in a court of law, MCA privileges will be considered to be revoked.
3. If found not guilty of charges, the individual or agency must provide copies of court documents, including transcripts, to the MCA.
4. 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.

E. A subject licensee may request a postponement of up to thirty (30) calendar days of a special PSRO meeting in order to prepare his/her individual or agency response to the complaint. The subject licensee must submit a copy of all supporting documentation to the MCA at least one week (5 business days) prior to the postponed review meeting.

F. The MCA is not a hiring entity and is not subject to collective bargaining. Union representation during MCA PSRO reviews is not permitted.

G. The MCA's PSRO investigates incidents, complaints, personnel and agencies. While a deed or misdeed may be civil or criminal in nature, the MCA's PSRO is not an adjudicating body for either of these conditions. The PSRO is not subject to the rules and statutes which govern civil or criminal

adjudication; as such, attorneys and legal representatives are not permitted in PSRO reviews.

H. Recording, monitoring or any manner of duplicating a PSRO review is not permitted unless conducted by the PSRO entity and expressly for PSRO purposes.
I. Disclosure of confidential PSRO materials[1] by individuals or agencies both before and after review shall be cause for possible suspension or revocation of MCA privileges, as well as possible statutory violations.
J. The MCA may disclose non-specific information relating to discipline of individuals or agencies. Care must be taken to not compromise any confidential information.[2]
K. Subject individuals or agencies may have agency representation at PSRO reviews provided PSRO standards are maintained.
L. Individuals or agencies failing to appear for PSRO reviews waive their right to representation and are subject to the summary findings of the review body. Failure to appear also constitutes a violation as defined in the **Incident Classification Policy**.
M. Subject individuals or agencies shall be notified of the findings of a PSRO review. If disciplinary action results, the individual or agency will be provided with any required remediation steps/actions and a copy of the **Disciplinary Action Appeal Policy**.
N. In the event that a complaint/investigation involves both the function of an individual and the compliance of their agency or department, the requirement for a 4 business day notice of any special meeting shall apply, unless a postponement is granted to the individual.

II. Application of Disciplinary Action

A. A primary function of disciplinary action is to ensure the protection and safety of the community and patients.
B. The application of remediation and/or discipline is intended to promote improvement in clinical and operational performance.
C. The MCA shall engage in a process to ensure that licensees maintain an appropriate level of clinical and operational performance.
D. The review process outlined in the **Complaint Investigation Procedure** shall be utilized in assessing the remedial and/or disciplinary action required.
E. MCAs should utilize Just Culture when applying or considering disciplinary action. There should be a balance between provider and system accountability.

III. Remediation

A. The Medical Control Authority may issue an order of remediation to correct substandard clinical performance.

[1] MCL 331.533
[2] MCL 331.533

B. A defined time period for completion of remedial activity shall be stated in the order.
C. Licensees shall be required to perform remedial activity under the supervision of an appointed proctor to correct an identified performance shortcoming.
D. Notice of a remedial order, or the order itself, shall be forwarded to the licensee's employer (or MCA board in the case of an agency provider).
E. A licensee shall be allowed only one opportunity for remediation of repetitive substandard performance in a twelve-month period. Subsequent episodes of substandard performance of the same nature occurring within the same twelve-month period shall be addressed under the disciplinary portion of this policy.
F. Disciplinary action may be accompanied by assignment of additional remedial activity.

IV. Discipline

Disciplinary action 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.

A. Order of Disciplinary Action
    1. An Order of Disciplinary Action (ODA) is a written document developed by the MCA and sent to a subject licensee for the purposes of clearly and plainly identifying the findings of the MCA, any disciplinary action and any required remediation.
    2. ODAs include, but are not limited to, written reprimands, written notice of suspension, written notice of revocation, a letter of warning and a letter of reprimand.
    3. The ODA must be delivered in a way that confirmed receipt by the licensee may occur.
    4. The licensee that receives an ODA must provide a copy to all MCAs in which they are privileged.
    5. Licensees receiving an ODA from another MCA must provide a copy of the ODA to this MCA.
B. Temporary Suspension of Privileges
    1. The Medical Director may temporarily suspend a licensee's privileges in cases where there is a clearly definable risk to the public health and welfare. The Medical Control Authority shall review such action within three business days after the Medical Director's determination.
    2. If a licensee's MCA privileges have been temporarily suspended from a licensee, the licensee shall not provide prehospital care until MCA privileges are reinstated.
C. Written Reprimand
    1. A written reprimand shall be issued to a licensee stating
        a. the details of the substandard performance

b. the remedial action, if required
c. the time allowed for completion of remedial action
d. the consequences for repetitive noncompliance

2. Notice of disciplinary action shall be forwarded to the licensee's employer (or MCA board in the case of an agency provider).
3. A copy of the **Disciplinary Action Appeal** policy shall be included in the notice to the licensee.

D. Probation

1. A probationary letter shall be issued to a licensee stating
   a. the details of the substandard performance
   b. the details of the probation
   c. the remedial action required
   d. the restriction of privileges, if applicable
   e. the time of probationary period
   f. the consequences for repetitive noncompliance
2. Notice of probationary action shall be forwarded to the licensee's employer (or MCA board in the case of an agency provider).
3. A copy of the **Disciplinary Action Appeal** policy shall be included in the notice to the licensee.

E. Suspension of Privileges

A licensee's medical privileges shall be suspended for a specified period of time.

1. A written notice of the suspension shall be issued to the licensee stating
   a. the details of the substandard performance
   b. the violation(s) of protocol and/or policy
   c. the term of suspension
   d. the remedial activity, if required
   e. the time allowed for the completion of the remedial activity
2. Notice of disciplinary action shall be forwarded to the licensee's employer, if employed (or MCA board in the case of an agency provider).
3. A copy of the **Disciplinary Action Appeal** policy shall be included in the notice to the licensee.
4. If a licensee's MCA privileges have been suspended from a licensee, the licensee shall not provide prehospital care until the MCA privileges are reinstated.
5. The Medical Control Authority must notify the department within one (1) business day of the removal of medical control privileges from a licensee.

F. Revocation of Privileges

1. The notice of revocation shall state the violation(s) of protocol and/or policy.

2. Notice of disciplinary action shall be forwarded to the licensee's employer (or MCA board in the case of an agency provider).
3. A copy of the **Disciplinary Action Appeal** policy shall be included in the notice to the licensee.
4. The Medical Control Authority must notify the department within one (1) business day of the removal of medical control privileges from a licensee.
5. Within one (1) business day of the removal of medical control privileges, the Medical Control Authority must notify all other Medical Control Authorities which it knows, or has reason to believe, have granted the licensee or agency Medical Control privileges.

G. Financial Penalties

The MCA may not apply financial penalties to individuals, per this policy. No such prohibition exists within statute; however, a MCA wishing to establish individual financial penalties must purposely develop an addendum to this policy.

H. PSRO Communications

PSRO protected entities may share PSRO information with other PSRO entities for the following purposes[3]:

1. To advance health care research or health care education.
2. To maintain the standards of the health care professions.
3. To protect the financial integrity of any governmentally funded program.
4. To provide evidence relating to the ethics or discipline of a health care provider, entity, or practitioner.
5. To review the qualifications, competence, and performance of a health care professional with respect to the selection and appointment of the health care professional to the medical staff of a health facility.

V. Alleged violations of administrative or operational protocol requirements by an EMS agency shall be resolved as follows:

A. The Medical Control Authority will notify the department chief or agency official of the alleged protocol violation.

B. Details of the alleged violation, and any response received from the EMS agency, will be presented to the MCA designated PSRO review body at their next meeting. The agency involved will be notified of and may attend the meeting and present any information it believes pertinent.

C. If the PSRO discussion will take place at an otherwise open meeting, the committee must go into closed session for PSRO purposes, prior to discussion. The predesignated PSRO of the MCA will then meet in closed

[3] MCL 331.532

session to perform the PSRO review. All parties not principal to the PSRO review shall be excluded from such a closed session review. No record of PSRO reviews shall be entered into the general minutes except to state that the committee entered/exited closed session for a PSRO review.

D. The PSRO of the MCA will review the alleged violation and by majority vote of the members present decide a course of action. Any sanction imposed shall follow the guidelines below:
    1. Severity of the violation will determine the level of sanction to be imposed.
        a. A violation is considered "minor" if it involves administrative infractions, including but not limited to, failure to timely file reports.
        b. A violation is considered "serious" if it involves intentional operational issues, including but not limited to, a failure to provide staffing as required by statute.
        c. An otherwise minor violation that is frequent or recurring may be considered by the Medical Control Authority to be "serious" for purposes of this section.
    2. If a minor protocol violation is determined by the Medical Control Authority to have occurred, a letter of warning will be sent to the EMS agency.
    3. If an initial serious violation or a second minor protocol violation within a six month period is determined to have occurred, a letter of reprimand will be sent and the EMS agency may be required to submit, within 15 days, a written statement of actions it will take to prevent future protocol violations.
    4. At the discretion of the Medical Control Authority, notice of these actions may be made public.
    5. A MCA may assess restrictions or limitations upon a licensed life support agency for non-compliance with protocols.

E. If a third of more frequent minor protocol violation is determined by the Medical Control Authority to have occurred within a period of 18 months, or if the violation is a second serious violation within 18 months, the Medical Control Authority may suspend or revoke its medical control oversight for the EMS agency. The EMS agency shall not provide pre-hospital care until medical control is reinstated. At its discretion, the Medical Control Authority may take any other action within its authority to prevent further protocol violations. Notice of this action shall be made public.

F. An EMS agency may appeal a decision of the Medical Control Authority. The EMS Agency must follow the **Disciplinary Action Appeal** policy.

VI. A licensee must notify the MCA of disciplinary action from the State of Michigan.

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, PRSO 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]

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 the **Patient Care Record, Electronic Documentation and EMS Information System** procedure.
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
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

Incident Classification

Purpose: To establish a process for the classification of Incidents reviewed by the MCA. Incidents will be divided into two categories, Level I and Level II.

Discretionary Powers
If the Medical Control Authority determines that an immediate threat to the public health, safety, or welfare exists, appropriate action to remove medical control privileges can be taken immediately and until the Medical Control Authority has had the opportunity to review the matter. A Professional Standards Review Organization (PSRO) hearing shall be held within three business days after the Medical Control Authority's determination to remove medical control. The Medical Director or his /her designee shall determine the personnel needed for the hearing.

Receipt and Investigation of Incidents
When the MCA becomes aware of a potential violation of the state approved policies, procedures, protocols, or statutes, the Medical Director, his/her designee, or the PSRO of the MCA will investigate the complaint per the state approved **Complaint Investigation Policy**.

Classification of Complaints
Complaints determined to be valid will be reviewed and will be classified using the criteria below. These criteria are for example purposes and do not form an all-inclusive list of potential violations. Violations that are substantively similar in type or severity will fall under the closest, most appropriate classification category.

Level I Incidents
The following categories of incidents are defined as Level I incidents:

1. Willful neglect of a patient
2. Abandonment of a patient
3. Failure to obey a medical control physician's legitimate orders either by omission or commission in the presence of good communications.
4. Improper and inappropriate care which may result in compromise of wellbeing of the patient
5. Conviction of a felony or misdemeanor
6. Two or more Level II offenses in any six month period *
7. Breach of Confidentiality
8. Intentional falsification of EMS documentation, including patient care records.
9. Found to be under the influence of drugs or intoxicants while involved with patient care.
10. Violation of the EMS statute and its attendant rules and regulations, including care outside the scope of practice, as defined by protocol.
11. Practicing in the MCA without a current Michigan EMS provider license.
12. Practicing in the MCA without current privileges on two separate occasions within a single licensure period. Certifications required by the MCA in order to maintain privileges are identified in the Authorization for **Medical Control Privileges** Policy.

13. Any other patient care offense resulting from violation of policies, protocols and procedures of similar severity not listed above at the discretion of the EMS Medical Director.
14. Failure to complete prescribed remediation from a previous incident. (Or see #14 of LEVEL II)
15. Arrest or criminal charges for criminal sexual conduct of any degree, violent crime, drug diversion or illegal possession or distribution of controlled substances.
16. Failure to notify the MCA of a criminal charge, arrest or conviction within 1 business day
17. Gross negligence or willful misconduct

* Time measured from the time of occurrence of the initial incident to the time of occurrence of the succeeding event.

Level II Incidents
The following categories of incidents are defined as Level II incidents:

1. Failure to adhere to system protocols, policies and procedures that had the potential to negatively impact patient care, as determined by the EMS Medical Director.
2. Failure of personnel or agency to respond within 96 hours of receipt of requests for information or documentation regarding an incident under investigation by the MCA. A response shall be submitted in writing and with a signed delivery receipt to MCA staff within the allotted time period.
3. Abuse and/or loss of system equipment due to neglect.
4. Significant documentation errors
5. Failure to accurately perform procedures as defined in protocols, policies and procedures.
6. Failure to check and maintain functional equipment necessary to provide adequate patient care at the level of licensure, the failure of which may lead to an inability to communicate with medical control, inability to administer appropriate medications, or otherwise negatively affecting the ability of the personnel to function at his/her level of training in the field. This includes verification that a sealed drug and IV box, functional monitor/defibrillator, functional airway equipment, etc. are present on the unit.
7. Improper or unprofessional medical communications including, but not limited to, any violation of Federal Communications Regulations, and falsification of identification during medical communications.
8. Failure to appear before the EMS Medical Director, designated PSRO committee or MCA Governing Body when so requested by the MCA, as defined in the Complaint Investigation, Quality Improvement and Disciplinary Action Policies.
9. Furnishing of information known to be inaccurate in response to any official request for information relative to quality improvement activities or other investigations subsequent to this policy.

10. Two or more orders of disciplinary action within a 6 month period **
11. Any other patient care offense resulting from violation of policies, protocols and procedures of similar severity not listed above at the discretion of the EMS Medical Director.
12. Practicing in the MCA without current credentials required in order to maintain privileges, as identified in the Authorization for Medical Control Privileges Policy.
13. Medication error, which has a negative impact on patient care.
14. A determination by the designated PSRO Committee of failure to complete prescribed remediation within the prescribed time frame.

** Time measured from the time of occurrence of the initial incident to the time of occurrence of the succeeding event.

Due Process and Disciplinary Actions
The application of disciplinary measures shall be defined by the state approved **Due Process and Disciplinary Action** Protocol.

Appeal Process
An appeal may be filed according to the **Disciplinary Action Appeal** Protocol.

Reapplication after Revocation
Following revocation of an involved party's privilege to practice in the MCA, the involved party may reapply to the MCA for privileges after no less than 24 months have elapsed from the date of revocation. Those issued a permanent revocation may not reapply for privileges at any time.

Physician Signatures and Medical Control Contact Policy

The intent of this policy is to establish a standard for when physician signatures are required on EMS reports/forms.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
	X	*X*	*X*	*X*	*X*	

I. Medical Control Contact for Dead-on-Scene (DOS), Do Not Resuscitate (DNR), or Termination of Resuscitation patients; signatures for all patients who die outside of the hospital and are not transported.

A. The signature on the EMS form is not, and does not constitute, a certificate of death. A physician, medical examiner, or pathologist, are the only ones permitted to sign a certificate of death, which must then be cosigned by a funeral director. Looking at statute and protocol, there is no need to get a physician to declare a time of death for EMS documentation. The EMS record or Electronic Patient Care Report (ePCR) is a legal document and may well be reviewed by the Medical Examiner, but it is not a required document needing a physician's signature in this type of case. (I.E. – you don't need to have EMS forms signed solely due to the death of the patient; there may be other causes to get a signature though)

B. A radio report is not required to be called through to On-Line Medical Control (OLMC) in order to "declare death" if the patient meets the Dead-on-Scene criteria as outlined in protocol. EMS personnel MAY choose to consult with OLMC if there is any question about the case. (I.E. – there is no need to talk with a physician to "declare" death)

C. For DNR patients meeting the DNR criteria listed in protocol, patient care should not be initiated, and the person may be treated as a Dead-on-Scene for reporting and signatory purposes.

D. A verbal report MUST be made to dispatch on a recorded line to report the DOS/DNR and get a time and number. The report must indicate that law enforcement and the medical examiner have been/will be contacted and the criteria that satisfy the DOS Procedure. (I.E. – you must call dispatch for recording and legal purposes)

E. Any death which is suspicious in any way must be reported to OLMC and both police and the ME must be notified and apprised of any suspicious circumstances. In these cases, the printed name (readable) of the OLMC physician must be included in the ePCR.

F. In Termination of Resuscitation instances (LALS or ALS level care initiated), a call must be placed through to OLMC (physician) in order to discontinue care. Since a direct order was received by a physician in order to terminate the resuscitation, a signature from that physician should be obtained if at all possible. Otherwise, another medical control physician from the same facility may sign the

form. The purpose of this signature is more for liability protection as professional standards review recordings are not required to be kept as long as are patient care records, nor would they be subject to a subpoena as a defense.

1) We do not need to have signatures on DOS calls.
2) We do not need signatures on DNR patients for whom no ALS or LALS care was provided.
3) We do not need to call in reports to physicians for patients that meet the protocol criteria for either of these two situations. The EMS crew will still need to notify dispatch of the call, record the justification for utilization of these protocols and obtain a number.
4) A physician must be consulted via a recorded line for any Termination of Resuscitation patient where LALS or ALS care was provided; a physician signature should be obtained on the EMS report.

II. Signatures on ePCR's and Other Forms

A. There are really only a couple of reasons that signatures are needed. In general, whenever statute would require a physician's signature and when there is a risk of liability to the EMS provider, wherein had approval from a physician not been given, the act, task or function would have fallen outside of standing orders.

B. Initiation of an IV and administration of all standing order protocol medications, with the exception of controlled substances, are covered by the Medical Director's signature and state approval of the protocols. Similarly, ALS level procedures, such as intubation, pleural decompression, etc. are, through protocol, delegated tasks of the Medical Director, and by statute define the scope of practice of privileged providers within the EMS system. Thus, no signature is required for these tasks unless they are expressly listed as post medical control, or for tasks that are not addressed in protocol but are ordered by a medical control physician.

Signatures are required when:

1. Controlled substances are given, both on EMS forms and on Narcotics Box Exchange forms
2. Controlled substances are wasted (RN or physician)
3. Orders are received that are listed within protocols as post radio or post medical control contact, including post contact repeated medications
4. OLMC medication dosing orders which alter or amend a protocol listed dose, route or medication
5. Procedural approval is required by protocol
6. A procedure not covered in protocol is ordered by a physician and thus becomes a delegated practice of that physician (*MCL § 333.16215*)

This does constitute the manner in which the MCA will measure compliance with these protocols. Nothing in this document is intended to conflict with current protocol, statute or state administrative rules.

Medical Control Privileges Testing Policy and Procedure

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X	*X*		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
	X	*X*	*X*	*X*	*X*	

Medical Control Authorities are required by statute to establish written protocols which define the acts, tasks, or functions that may be performed by each level of emergency medical services personnel. Similarly, each MCA must establish procedures to assure that life support agencies are providing clinical competency assessments to emergency medical services personnel before the individual provides emergency medical services within the medical control authority region.[1]

In order to accomplish these statutory tasks and to ensure that licensed personnel obtain and maintain knowledge of the written protocols, which govern their scope of practice, the participating Medical Control Authorities of the West Michigan Regional Medical Control Consortium (WMRMCC) have agreed to develop a standardized policy and procedure for the testing of EMT, Specialist and Paramedic providers. Due to the nature of the regional system, many providers work in more than one medical control area, thus a coordinated testing mechanism is mutually beneficial.

Testing Requirement

- Each provider, employed as a staff member on a transporting ambulance service, must successfully complete the privileges test prior to being released from a Field Training Program.
- Providers are required to test every other year.
- Providers may be required to pay a testing fee.
- Medical Control Authorities or EMS agencies may elect to cover individual testing fees on a local basis

Responsibilities:
WMRMCC

- Function as the contracting entity with the testing vendor
- Coordinate with the testing vendor for question development
- Coordinate the proportional funding of the operational costs from each participating MCA
- Provide payment through the WMRMCC fiduciary from the participants and to the testing vendor
- Appoint a testing administrator tasked with oversight, coordination and administration of the program
- Ensure a mechanism for the payment of individual test taking costs
- Develop "Courses" under the WMRMCC "School" for each participant MCA (Course = MCA)
- Establish a cut-score level which equates to an acceptable demonstration of proficiency in clinical assessment, protocol knowledge and application of the protocols.

[1] R325.22207(1)(a)&(b)

MCA's

- Proportionally fund the testing system cost
- Adopt this protocol within each MCA participating in the testing process
- Develop "classes" and place students into each class to allow them to test Develop a local process for the payment of test taking fees. These costs may be covered by the MCA, by the employing agency or by the individual provider based on local MCA policy.
- Appoint a Course administrator to develop classes and review testing results
- Assign personnel to each class
- Verify successful test completion of personnel assigned to each class
- Provide remediation and review when necessary
- Apply remedial actions consistently as outlined in the Remediation Section of this policy
- Ensure that the test is administered according to the Test Administration Section of this policy

Testing Vendor

- Duties and responsibilities of the testing vendor shall be based on the contract for services
- Development of test questions according to recognized educational standards
- Administration of the web-based test environment
- Customer support
- Collection of appropriate fees
- Security of test questions
- Reporting
- Validation of questions
- Updating of questions when protocols change

Agency

- Agencies are responsible to ensure that assigned personnel complete their test when assigned to do so
- Ensure compliance with the Test Administration Section of this policy
- Ensure that a local process is in place for the payment of test taking fees

Licensed Personnel

- Comply with testing requirements
- Comply with Test Administration Section of this policy

<u>Test Administration</u>

- The test may be administered at each Medical Control Authority or by the Medical Control Authority at a separate location with internet and program access.
- The test may be administered at a local EMS agency provided the provision of this section are met and adhered to. The MCA may audit the test location at any time, without notice
- The MCA may require video access to testing locations at the discretion of the MCA and hosting agreement with the agency wishing to provide the test to their providers
- Agencies which receive MCA approval to host the test may host providers from other agencies according to these guidelines. Agencies offering testing to non-employees may charge a nominal fee for facilitation of the test not to exceed $10 per test taker.
- All tests must be proctored (taken in the presence of a designated individual)
- Tests may be administered to individuals or groups, provided there are individual computers distanced far enough apart to ensure that screens are not visible from one station to another.
- Reference materials of any type, with exception to a Broselow Tape and/or MI-MEDIC Cards, may not be used.
- Talking between test takers during the test is not permitted

- The proctor may not answer or interpret questions
- The proctor must verify the identity of the individual taking the test
- The proctor must ensure that reference materials are not used
- Electronic devices must be left with the proctor during the test
- The test taker will be informed of either Pass or Fail at the completion of the test. No score will be provided
- This protocol must be available for review prior to taking the test.
- Anyone found to be cheating will have demonstrated that they should not be trusted to be placed into situations where they may come into contact with patient belongings or agency materials and will have privileges immediately suspended. Revocation will be at the discretion of the MCA.
- In order to validate questions, there may be questions included in the test which are not assigned a value. These do not count for or against the test taker.
- Test questions may not be copied in any manner and may not be removed from the testing facility.

Remediation

- Agencies which have providers fail to take their scheduled test shall be held accountable by the local MCA as is outlined in their local protocol for agency accountability to protocols
- Individuals who fail to take the test as assigned shall have their privileges suspended immediately and must contact the MCA for authorization to test. They may not function in any patient care capacity within the MCA during the interim; this includes any secondary EMS employment as well.
- Test takers will be informed of their pass-fail status at the end of the test
- In the event that a provider fails the test, they may review the test with the medical control test administrator, by appointment
- The test may not be retaken after a failed attempt for 7 calendar days from the date of the failed attempt.
- During that time, the provider is encouraged to meet with the MCA to review their test and to study the protocols
- The first retest must be taken within 14 calendar days or the individual will have medical control privileges suspended for not less than 30 days.

- If a provider fails their first retest, (second testing attempt) they must work with: (MCA must select local option(s) in advance)
  - ☒ Licensed paramedic who has successfully passed the test
  - ☐ A senior/level 2 or equivalent paramedic
  - ☐ A field trainer
- In the event that the first retest is failed, the provider will again be ineligible to retest for 7 calendar days.
- The second retest must be completed within 14 days of the failed retest.
- Should the individual fail on the second retest (third attempt to pass the test), MCA privileges will be suspended for not less than 90 days.
  - The individual may not provide care on an ALS ambulance during that time.
  - They may provide care for a secondary EMS employer at the Basic or MFR level if approved by the MCA.
  - They may not function as a BLS provider on an ALS ambulance.
- Following the 90-day suspension, the individual will have one additional opportunity to pass the test. If unsuccessful, they will be ineligible to retest in any participating MCA for 1 calendar year; or earlier with proof of successful completion of a state approved provider refresher course.
- Individuals with documented reading disabilities may have special accommodations made including quiet spaces and/or having the test read. This may only occur with documented disability with accommodation recommendations.

- In rare situations with extenuating circumstances the timeframe for retests may be extended for a period of not more than 7 days only after the provider meets with the local Medical Director to discuss the specific need for the extension and receives approval. The meeting must occur prior to the expiration of the original 14-day mandatory waiting period between retests and will not reduce any other provisions contained within this policy.

Privileges

The extension of Medical Control privileges by a Medical Control Authority is contingent on multiple factors, of which the test is only one. Successful completion of the test is required in order to obtain privileges however; successful completion alone does not guarantee the granting of privileges.

Those whose privileges have been denied, revoked or suspended in any medical control must notify other Medical Controls in which they intend to function of the denial, suspension or revocation. Likewise, a provider who has failed to pass the test in one MCA, who intends to apply to another MCA must inform them of the test failure and the dates of any test attempts.

Tests taken in one MCA shall be applied against attempts in another including time limits and constraints.

Any provider who fails to communicate to a new MCA or agency of a previously unsuccessful test, a suspension or revocation within another MCA based on the test, or for any clinical care issue shall have privileges permanently revoked. They shall be ineligible to reapply for privileges within a participating MCA unless such a decision is reversed under the disciplinary action appeal policy of that MCA.

Alternative Transport Policy

Purpose: To define Ambulance Transportation of Patients to Other than Hospital Emergency Facilities.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

EMS agencies shall transport emergency patients to hospital-based emergency facilities or a freestanding surgical outpatient facility that operates a service for treating emergency patients 24 hours a day, seven days per week.[1] Transportation of emergency patients to physicians' offices, clinics, urgent care centers or other health facilities will not be allowed at any time.

When a transporting agency receives an unscheduled request for service (emergency request) in which the patient, family or legal power of attorney requests transportation to a non-hospital based medical facility AND the patient's condition is clearly stable, such that it can be determined that an emergency no longer exists, the transporting agency personnel must contact, and may receive approval from, on-line medical direction permitting them to reclassify the patient as a non-emergent patient, thus allowing the transport of the patient to other than a hospital emergency facility.

[1] *R 325.22112 Patient destination; transporting agencies*
Rule 112 (1) An ambulance operation, both ground and rotary, shall transport an emergency patient only to an organized emergency department located in and operated by a hospital licensed under part 215 of the code or to a freestanding surgical outpatient facility licensed under part 208 of the code that operates a service for treating emergency patients 24 hours a day, 7 days a week and complies with medical control authority protocols.(2) Subrule (1) of this rule shall not apply when a determination is made that an emergency no longer exists in accordance with department-approved protocols

ICD and Pacemaker Deactivation Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
			X		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*		*X*	*X*	*X*	

IMPLANTABLE CARDIO-DEFIBRILLATOR (ICD)
The application of this procedure is limited to **paramedics** who have been trained in the ICD deactivation procedure. A direct on-line medical control order is required to perform this skill.

An ICD is an implanted defibrillator device that consists of a lead system that senses cardiac activity, logic circuitry to analyze the sensed signals, a power supply for device function and generating high voltage, and a capacitor that stores and delivers shocks when bradycardia and/or tachyarrhythmias are detected within programmed parameters. These devices may malfunction occasionally.

INDICATIONS:
For verified frequent and recurrent inappropriate ICD discharges, a magnet may be utilized to deactivate devices. Inhibition of ICD devices should be considered only when continuous ECG monitoring and ACLS interventions are readily available.

PROCEDURE:
A. Contact on-line medical control
B. Monitor ECG and verify "triggering" rhythm AND inappropriate defibrillator discharge.
C. Identify the location of the ICD device.
D. Place donut magnet directly over the ICD device
E. After defibrillator deactivation, tape magnet firmly in place and transport.
F. Treat underlying rhythm per ACLS protocols.

PRECAUTIONS:
A. It is very important to make the correct diagnosis before utilizing this protocol (ECG showing "triggering" rhythm and indications of recurrent ICD discharges).
B. Some ICD devices will emit varying beeping or continuous tones when magnets are applied, others will not. Disregard these tones.
C. If the magnet placement is successful in overriding the pulse generation of an ICD, DO NOT REMOVE THE MAGNET. Some units will return to operation after removal of the magnetic.

SPECIAL CONSIDERATIONS:
A. Magnets should be stored so as not to come in contact with magnetic sensitive materials, i.e., tapes, credit cards, magnetic door entry cards and other electronic equipment.
B. A small percentage of ICDs are impervious to magnetic fields (ICD recipients who work around magnetic fields have these special units) and will not be deactivated with the doughnut magnet. In such cases, advise on-line medical control and transport.
C. Consider the use of the ICD magnet in deactivating cardiac pacemaker malfunctions.
D. Identification information of the ICD type, date implanted and location of implantation (location of device usually indicated on a wallet card) should accompany the patient to the emergency department.

Left Ventricular Assist Devices

This procedure applies to the management of all patients who have a Left Ventricular Assist Device (LVAD).

An LVAD is a mechanical pump that is used to support heart function and blood flow in people who have weakened hearts. The device takes blood from the lower chamber of the heart and pumps it to the body and vital organs, just as a healthy heart would.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Medical First Responder/Basic Life Support

1. *Above all else please remember that these patients, along with their families, have been well trained in the care of themselves and their devices. LISTEN TO THEM!*
2. Evaluate breathing and assist with or provide ventilations, as needed
3. If the patient is unconscious, unresponsive to stimuli, and pulseless listen to the patient's chest, as if listening for heart sounds. With a functioning LVAD you should hear a continuous whirling sound.
4. If you hear the whirling sound of the LVAD, DO NOT PERFORM CPR. The LVAD has been surgically placed into the left ventricle and CPR could dislodge this device, causing death.
5. If you cannot hear the device, then CPR should be performed per ***Cardiac Arrest Protocol***.
6. Locate the colored sticker/tag on the LVAD controller, usually found at the patient's waist, and match this to the color-coded EMS guide.[1]
7. ***Call the emergency alternative number on the back of the device to speak to the on-call LVAD physician.***
8. Using the EMS LVAD guide, intervene appropriately based on the type of alarm and device. [2]

Notes:

- *In a majority of these patients a pulse will not be palpable. This occurs because the LVAD unloads the ventricle in a continuous fashion and therefore the aortic valve may not open with each contraction.*
- *A manual blood pressure may not be obtainable, but with an automated cuff you should be able to obtain a pressure with a narrow pulse pressure.* ***Your treatment of the patient will be based on the mean arterial pressure (MAP). In these patients, the normal range for MAP is greater than 60 mmHg and less than 90 mmHg. (Look at the MEAN pressure on the automated BP)***
- *Pulse oximetry may not be accurate due to the continuous flow nature of the LVAD.*
- *Patients most always carry a "backup bag" which contains 2 extra fully charged batteries, and a second controller. Please make sure to always bring this emergency backup equipment with them to the hospital.*

Advanced Life Support (Follow appropriate protocol)

[1] The most current version of the LVAD EMS Guide is required on all licensed Life Support vehicles.
[2] The EMS guide and education may be accessed at http://www.mylvad.com/content/ems

In addition to the BLS care above:

1. *Above all else please remember that these patients, along with their families, have been well trained in the care of themselves and their devices. LISTEN TO THEM!*
2. ***Call the emergency alternative number on the device for the on-call LVAD physician.***
3. Perform cardiac monitoring
4. Evaluate a 12 lead ECG if chest pain or ischemic equivalent symptoms
5. If patient meets STEMI criteria on 12 lead ECG, follow STEMI procedures
6. All dysrhythmias should be treated in accordance with appropriate Dysrhythmia Protocol.
7. For conscious electrical defibrillation, the patient may be sedated with Versed per the *Sedation Procedure* if the MAP is greater than 65mmHg.
8. Record and monitor continuous O^2 saturation; sometimes not obtainable with LVAD patients. In addition, you may utilize End Tidal CO^2 (capnography).
9. If evidence of dehydration, bolus 250 ml of Normal Saline (NS) with a max of 500 ml of NS until patient is normotensive, (≥ 65 mmHg MAP). If patient shows signs of Congestive Heart Failure (crackles on auscultation of lungs, JVD or peripheral edema) withhold fluid bolus.
10. Minimize on scene time when possible
11. Transport these patients to the closest LVAD center. Bring the significant other or caretaker if possible to act as an expert on the device, especially if the patient is unconscious or unreliable.
12. Refer to the LVAD EMS guide for further information on field care of these devices.

Medical Direction Override Policy

Once on-line medical direction has been established between EMS personnel and the medical direction physician, the EMS personnel are expected to follow the on-line direction provided. In rare circumstances, EMS personnel may feel that the direction provided is outside the scope of practice outlined by Protocols, Policies and Procedures or is not in the best interest of the patient. In those situations:

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

1. In those situations, in which medical direction is being relayed from the physician through ED personnel, the EMS personnel should request to talk directly with the on-line physician.

2. The EMS personnel should continue to discuss the situation with the medical direction physician to clarify any confusion or extenuating circumstances that may exist.

3. In extremely rare situations in which the EMS personnel feel that the medical direction provided is contrary to quality patient care, the medical direction should not be followed, and the case discussed further with the physician upon arrival in the ED.
   a. If it is critical for patient care that the EMS personnel further discuss the case with a physician, the EMS personnel should:
      1) Ask Dispatch to determine if the EMS Medical Director is monitoring radio traffic and is available to provide the needed on-line medical direction.
      2) Contact another emergency department to provide the needed direction; the medics should inform the second ED that this call involves an override situation (request for second opinion).
   b. The patient may still be transported to the original hospital.
   c. Dispatch will notify the original hospital that a second medical direction contact has been made and will identify the destination hospital.

4. These situations should, in no way, delay patient transport.

5. Each instance in which this type of situation has occurred is considered a SENTINEL EVENT and will be immediately reported to the MCA by the prehospital provider and will be reviewed.
   a. The EMS personnel involved will notify agency management and complete an incident report immediately upon completion of patient care activities for that patient. This incident report and a copy of the EMS Form will be immediately forwarded to the MCA.
   b. At the time of the incident, Dispatch will immediately notify the Medical Director. Dispatch will also download the appropriate radio or telephone traffic for review.
   c. The MCA will review the incident and follow-up with the personnel, the agency and the emergency department personnel involved in the incident.

Treatment and Transport of a Minor Patient Policy

Purpose: **To define the process to be followed when EMS personnel are interacting with patients who are minors.**

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Policy: To be utilized if the patient requiring medical treatment and/or transport is a minor. The age of majority in the State of Michigan is 18 years old. As matters of law, those patients less than the age of majority are legally unable to consent to, or refuse consent for, emergent or life threatening medical-care. The minor's parent or legal guardian can only provide such permission, unless the patient is an emancipated minor *.

1. If immediate emergency treatment is required, and the parent or guardian cannot be immediately contacted, the needed treatment and transportation of the minor patient will be provided.

2. If urgent or non-emergency treatment is required, consent should be obtained from the patient's parent or guardian, if possible. If parents or guardians are not immediately available and cannot be contacted, treatment and transport should be provided, under the assumption that this is in the best interest of the patient.

3. If, in the medical judgment of EMS personnel, the minor patient needs medical treatment and transport, and consent is refused by the parent or guardian, EMS personnel should immediately contact medical direction **.

4. If the parent or guardian is not available and the minor patient refuses treatment or transport, EMS personnel should immediately contact medical direction **.

5. If the minor patient has not sustained emergent or life-threatening injuring, the parent or guardian is not available and a competent adult is willing to assume responsibility for the minor patient, EMS personnel should immediately contact medical direction **.

6. In any other situation in which treatment or transport of a minor patient is in question, contact medical direction immediately **.

* An emancipated minor is one who is married, is a parent, lives apart from parents and is self-supporting, or has been granted emancipation by the court.

****** **At onset** of communication to medical direction, inform hospital that this is a minor patient refusal situation.

Public Access Defibrillator Policy

Purpose: To provide a standard for first response agencies arriving to find a Public Access Defibrillator (PAD) in use for cardiac arrest patients.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

I. **Definitions:**
Public Access Defibrillator- any defibrillator that is available on location for use by the public, security personnel or designated in-house response personnel.

II. **Procedure:**

A. When MFR's arrive at a patient that has had a PAD placed:
   1. Determine if the defibrillator shocked the patient prior to your arrival.
   2. Verify that the patient is in cardiac arrest and verify proper placement of the pads.
      a. If the patient is conscious, leave the pads in place and turn the AED off.
      b. If the patient is unconscious but has signs of life, leave the AED in place and turned on. Continue with assessment of CAB's.
      c. If no pulses are present and the patient is taking agonal breaths, OR if the patient has no signs of life, press "Analyze".
   3. The PAD AED should be left in place and utilized if it is functioning properly and there is someone familiar with the operation of that particular unit.
   4. If the PAD AED is not functioning properly the PAD AED should be removed and the MFR AED placed and utilized.
   5. It is both acceptable and appropriate to utilize persons that are trained in the use of that particular unit, just as it is appropriate to utilize trained bystanders for CPR. The decision to utilize bystanders is left to the duty crew treating the patient.

B. Continue with the resuscitation as indicated in the Cardiac Arrest Protocol.

C. Once available, the ALS monitor defibrillator should replace the AED.

NOTE: Do not delay defibrillation, or AED cycles, to change from one AED to another.

Pediatric Policy

Purpose: To define the "pediatric patient" as applied throughout the Protocols.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Definitions:

1.) **Trauma or medical condition as applies to the destination matrix**, a pediatric patient is considered to be any individual less than 15 years old (14 or less).

2.) **Drug administration:**
- Use weight/length-based tool (Broselow tape required)
- Use MI-Medic cards (required)

3.) **Legal decisions,** a pediatric patient is considered to be any individual under the age of 18 who is not emancipated.

Broselow Tape:

1.) The Broselow Tape color must be called in to the emergency department during radio reports concerning critical pediatric patients. This includes children from birth to 14 years that are 5 feet tall, or less.

Medical Evaluation and Rehab of Public Safety Personnel Policy

Purpose: **To provide the process for EMS activities when requested by a designated fire-service agency, or public-safety department, to provide medical stand-by and/or rehab at a fire or other scene in which emergency responders may be exposed to environmental extremes, or fatigue, due to the nature or length of the incident.**

Stand-by: A "stand-by" is simply a request for EMS service to be present at an event or incident.

Rehab: A "rehab" or "rehab stand-by" is an active role in assisting on scene in the role of medically evaluating fire-fighters/emergency responders during the course of an incident. The "rehab" crew may also be utilized to provide care to effected civilians from the incident. This is a dedicated crew that will work as a functional sub-section of the Incident Command System.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*			*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

I. Requests and roles

A. Requests

1. Requests for rehab or scene stand-by may originate from any designated public safety agency for the purposes of providing an on-site medical resource at the scene of an incident or exercise.

B. Dispatch

1. Requests for either a stand-by or rehab will be considered a priority 2 response.
2. A concerted effort must be made to avoid reassigning the initial unit assigned the call.
3. Units on scene of a "stand-by" may be pulled for emergency calls only, after consulting with the Incident Commander, and must be replaced as soon as is possible with another unit.
4. Units on scene of a "rehab" become a functional unit of the incident response and are not to be pulled from the scene until the incident has resolved and the Incident Commander concludes rehab. In the event that a crew must be replaced due to shift change, or other unforeseen reasons, another crew must be on scene and be briefed by the departing crew before the initial crew may depart.
5. Crews assigned to a rehab will not be transporting units. Additional ambulances will be called in to transport patients from the scene if necessary.

C. Responding Units

1. Responding units for either a "stand-by" or a "rehab" must take care when they arrive to park the vehicle far enough away from the actual scene that they do not place the vehicle where it will be blocked in by additional response vehicles or hose lines.

2. Immediately after arrival to the scene the crew must locate the incident commander and notify him/her in person that the ambulance crew is on scene.
3. The crew must ask the Incident Commander where the ambulance should be placed.
4. The crew must also ask if they are needed for a stand-by or if they are needed for rehab.
    a. The EMS crew must notify their dispatch as to what role they are assuming.
    b. If the Incident Commander only needs them for stand-by, the crew should relocate their vehicle to the place designated by the Incident Commander and ensure that they will not be blocked in.

        (1) Their responsibility during the stand-by is to be available if needed, request additional ambulances if needed, treat patients from the incident and either hand off patients to arriving units (if more than one patient), or transport patients. A replacement unit should take their place if they transport.
        (2) The stand-by must be staffed with an ALS unit until notified by Incident Command that their presence is no longer necessary.
    c. If needed for rehab, the crew must ask the Incident Commander who has been placed in charge of rehab. Typically this will be either a designated rehab officer or the safety officer.
    d. The crew must then locate the officer in charge of rehab and determine where they should set up.
        (1) In some instances the ambulance may be used for the rehab facility; in other circumstances an ancillary building, garage, bus or tent may be used.
        (2) If setting up in a location other than the ambulance the crew should bring the jump bag, O2 and supplies, pulse oximetry, the monitor and drug bag, sterile fluids (irrigation), the stretcher and IV bags. The ambulance should be readily available and located near-by in the event that additional equipment is needed.

D. EMS Rehab Units – Roles and Responsibilities
1. Once the Rehab Officer has been contacted, and the location of the rehab determined, the crew should bring their equipment and set up.
2. The crew should notify their dispatch where the Rehab facility is located.
3. Take note of access routes to the rehab area in the event that ambulances are needed for transport.
4. The Rehab Officer will be responsible for setting the location, arranging for fluids and snacks for consumption and coordinating the rotation in to the rehab facility. The Rehab Officer will be responsible for determining the length of time between mandatory rehab rotations.
5. The medical crew will be responsible for evaluating the personnel as they rotate in to the rehab facility.
6. Parameters for rotation into rehab include:
    a. Initial evaluation for baseline vitals before entry into the event.
    b. The “two air bottle rule”, or 45 minutes of work time.
    c. Outward signs of fatigue or illness
    d. Complaints of fatigue or illness

e. Time between mandatory rehab visits may be shortened if adverse weather conditions are present.
f. The FEMA, USFA Emergency Incident Rehabilitation publication, FA-114/July 1992, may be referenced for additional set up and operational parameters.

7. EMS will complete a baseline set of vitals for newly arrived personnel prior to their being sent into the incident. This may not be possible for the personnel that initially responded and began working the incident. These baselines will help identify change when the individuals next rotate through rehab. Results must be recorded on the Emergency Incident Rehabilitation Report.
8. EMS will obtain a complete set of vitals and an evaluation on all personnel that report to rehab after working the incident. The EMS personnel shall make a proper disposition (return to duty, continued rehabilitation, or medical treatment and transport to a medical facility).
9. Continued rehab should consist of additional monitoring of vital signs, providing rest and providing fluids for rehydration. Medical treatment for personnel whose signs and/or symptoms indicate potential medical problems should be provided in accordance with local protocol.
10. EMS personnel should be assertive in an effort to find potential medical problems early.
11. The heart-rate should be evaluated for 30 seconds as early as possible in the rest period. If a member's heart-rate exceeds 110 bpm, an oral temperature should be obtained. If the member's oral temperature exceeds 100.6°F, he/she should not be permitted to wear protective equipment. If the temperature is below 100.6°F and the heart-rate remains above 110 bpm, rehab time should be increased.
12. All medical evaluations shall be recorded on the Emergency Incident Rehabilitation Form along with the member's name and complaints and must be signed, dated and timed by the Rehab Officer or his/her designee.
13. In all cases, the objective evaluation of a member's fatigue level shall be the criteria for rehab time. Rest shall not be less than 10 minutes and may exceed 1 hour, as determined by the EMS crew and the Rehab Officer.
14. DO NOT delay treatment of, or requesting a transporting ambulance for, member's that present to rehab with signs and symptoms of potentially life threatening conditions (chest pain, decreased LOC, SOB with wheezes, rhonchi or stridor, dizziness, syncope, burns, etc.).
15. Fresh crews, or crews released from the rehab facility, must report to the staging area to ensure that fatigued members are not required to return to duty before they are rested, rehydrated, evaluated and released by the Rehab Officer.
16. Crews in rehab shall not leave the Rehabilitation Area until authorized to do so by the Rehab Officer.
17. A EMS form must be completed for personnel who receive treatment beyond evaluation and VS. This includes Oxygen administration for smoke inhalation, IV fluid replacement and mandatory extended rest due to excessive fatigue, fever, dizziness, etc.

E. Conclusion of Rehab Activities
1. EMS will remain in Rehab after the incident is completed to ensure thorough evaluation of personnel.
2. EMS shall remain in Rehab until cleared by the Rehab Officer or the Incident Commander.

3. Documentation of the medical evaluations performed during rehab, on the Emergency Incident Rehabilitation Reports, will be given to the Rehab Officer as well as copies of the EMS reports for all personnel treated or transported from the scene.
4. Once cleared from the scene, the EMS crew should contact their dispatch to advise that the incident has concluded.

Note: If Rehab is established on the scene of an MCI, it should be positioned near, but not within, the treatment and transport area to ensure that personnel receive appropriate rest and are not pulled from rehab for other duties prior to adequate rehab.

EMERGENCY INCIDENT REHABILITATION REPORT **INCIDENT:** ______________________________

DATE: ______________________

NAME/UNIT #	TIME(S)	TIME/ # of BOTTLES	BP	PULSE	RESP	TEMP	SKIN	TAKEN BY	COMPLAINTS/CONDITIONS	TRANSPORT Y/N	TIMES OUT

EMERGENCY INCIDENT REHABILITATION REPORT **INCIDENT:** ______________________________

DATE: ______________________________

NAME/UNIT #	TIME(S)	TIME/ # of BOTTLES	BP	PULSE	RESP	TEMP	SKIN	TAKEN BY	COMPLAINTS/CONDITIONS	TRANSPORT Y/N	TIMES OUT

Muskegon County MCA
SYSTEM PROTOCOL
LIFE SUPPORT AGENCY CREDENTIALING

Date: July 24, 2020 Section: 8.39
Revised Date: February 5, 2021

Life Support Agency Credentialing

All life support agencies, vehicles and personnel must be approved to function in the Muskegon County Medical Control Authority (MCA). Approval may be granted by the MCA only after completion and submission of the necessary documentation, licensure and executed agreements as deemed necessary by the MCA. All services and vehicles must be approved and licensed by the MDHHS Bureau of EMS, Trauma and Preparedness (Department). Failure to comply with the requirements as written will result in denial or revocation of approval to function within the MCA. New service application review will be conducted by the Medical Control Board (MCB) and final approval for new services, significant geographic service area changes, and significant service licensure level changes, will be determined at the discretion of the West Michigan Regional Medical Consortium MCA.

All transporting services must receive accreditation by a national EMS accrediting body that has been approved by the MCA. All new transporting agencies must apply for accreditation within thirty (30) days of MCA approval to operate, and must become accredited within one (1) year, or must show compliance from another service area if a CAAS inspection has already been completed within 1 year. The agency will certify to the MCA that their application to become accredited in the MCA has been filed with the accrediting body and show proportionate progress. Services not meeting these accreditation requirements in the medical control zone may lose privileges to operate.

All life support agencies must meet the requirements of this and all current MCA approved protocols**.**

Policy:

A. All licensed life support vehicles operating within the MCA will carry the required equipment and supplies as listed on the applicable Department vehicle checklist for minimum equipment requirements unless waived by the MCA with Department approval. Additional supplies and equipment shall also be carried on each licensed life support vehicle, as deemed necessary by the MCA and reflected within Department approved protocols. The supplies and equipment shall be consistent with the license level of the unit. BLS licensed transporting units may carry equipment at the ALS level, such as medications, airway equipment, etc., for facilitation of rapid upgrade to the ALS level with appropriate staffing but must ensure access is limited to ALS providers.

B. Life Support Agencies (LSAs) authorized to operate within the MCA will be based within a defined geographic area within the MCA on a twenty-four (24) hour-a-day, seven (7) day-a-week basis. All LSAs must have a defined primary geographic service area. The minimum service area for Advanced Life Support (ALS), Basic Life Support (BLS) and Medical First Responder (MFR) LSAs will be a municipality jurisdiction. MFR or BLS non-transport agencies may have a geographic service area defined by a business property (e.g., industrial plant MFR). The geographic service area for an ambulance operation is defined as the area where the service provides primary ALS emergency response. Only ambulance operations licensed at the ALS level will be permitted to operate within the MCA. Other proposals may be considered at the discretion of the MCA Medical Director.

C. If any approved BLS or ALS unit becomes mechanically inoperative and a backup unit is not available, the MCA Medical Director must be notified immediately. This notification is necessary to assure consistent coverage and availability of Emergency Medical Services (EMS) within the MCA. Notification should be made to the MCA Administrator. An estimate of the downtime should also be provided. When the unit is returned to service, appropriate notification should again be made as above.

Procedure:

A. Any service intending to provide MFR, BLS or ALS services within the MCA will be required to submit the appropriate application form(s) and responses to questions **(Appendix A)** to the MCA for review and approval.

B. Prior to submitting an application for implementation of service, the requesting agency will be required to meet with the MCA Medical Director, or designee, to review all necessary application procedures. Current applicable protocols and application forms will be reviewed at this meeting.

C. The applying agency will complete and forward to the MCA office all forms required electronically and by certified mail or delivered in person. A non-refundable application fee approved by the MCA is required. The application fee will accompany application to the MCA. The application fee will be in the form of a certified check payable to the West Michigan Regional Medical Consortium.

D. Once the requesting agency has completed step B, the requesting agency has 60 days to complete the application and return all forms for review. Upon receipt of the application the MCA Medical Director will review the application and arrange a site visit of the agency. If the MCA Medical Director identifies and documents significant deficiencies in the application or identifies deficiencies during the site visit of the agency, the agency will be informed of these and will be required to return to step B. Failure to submit an application within 60 days will also require the agency to return to step B.

E. Not less than ninety (90) days after receiving an acceptable application as determined by the MCA Medical Director, the Medical Control Board (MCB) will decide on local provisional approval. The MCA Medical Director may forward applications to the MCB at his/her discretion. If deficiencies are identified by the MCB, the applicant agency will have 120 days from notification to rectify deficiencies in their application. Provisional approval is only given once all deficiencies have been rectified as determined by the MCB. Provisional approval allows field personnel to participate in MCA procedure clearance and testing. Applicant agencies will have 60 days from notification of provisional approval by the MCB to complete minimum requirements for unit staffing as required by the MCA.

F. Once an agency indicates that they have met MCA requirements, the MCB will provide a final review of the application within 90 days. Acceptable actions include approval, denial, or notification of remaining deficiencies. For new services and for services with significant geographic service area or licensure changes to the ALS level, the Medical Control Board (MCB) will convene within 90 days of completion of MCA requirements to determine final MCA approval. Services whose application is denied by the MCB or MCA may not submit a new application for one (1) year.

G. All correspondence relating to a new service application will be sent by certified mail. Appeal of decisions must be made in writing to the MCA**.**

Appendix A: Life Support Agency Credentialing Application Form

Date of Application: _____

Name of Service: _____

Mailing Address: _____

_____

Contact Person: _____

Phone Number: _____

Fax Number: _____

Please answer all the questions on the following pages completely and attach to the application.

_____
Signature of Chief Executive Officer

The above signature expresses a willingness to comply with all West Michigan Regional Medical Consortium Medical Control Authority protocols, procedures and directives. Misrepresentation of any item on the application will disqualify the service from certification consideration for a period of one (1) year.

A non-refundable fee of **$2,500** must accompany this application for ALS services and **$1,000** for BLS services. Upgrade to BLS from MFR has no application fee. The application fee must be in the form of a certified check made payable to: West Michigan Regional Medical Consortium. It must be mailed to:

West Michigan Regional Medical Consortium
1675 Leahy St
Suite 308B
Muskegon, MI 49442

Please provide the following requested information

1. **SPECIFIC GEOGRAPHIC AREA:** Detail information outlining the proposed primary geographic service area (location, city, township, etc). Describe your plan for connection to your service area's 911 system.

2. **SPECIFIC ADDRESS AND/OR FACILITY LOCATION WHERE YOUR UNIT(S) WILL BE STATIONED WHEN NOT ON A RUN:** The proposed unit(s) must be based within the municipality served.

3. **TYPE OF SERVICE YOU WILL PROVIDE:** Transporting or non-transporting units. Pre-hospital only or Pre-hospital and inter-hospital care and at what level of service: MFR/BLS/ALS.

4. **DEPARTMENT LICENSED AMBULANCES TO BE USED IN WEST MICHIGAN REGIONAL MEDICAL CONSORTIUM MEDICAL CONTROL AUTHORITY:**
Provide a list that includes license level, license number, VIN and transport capabilities. (Transport capability means that the unit is licensed as a transportation unit). If the service proposed will use new vehicles or vehicles not currently licensed in the West Michigan Regional Medical Consortium Medical Control Authority, please submit appropriate paperwork to the MCA to complete this process. Provisional approval will be given at the discretion of the MCA, based on satisfactory completion of the New Service Application, allowing field personnel to participate in MCA procedure clearance and testing. MFR services upgrading to BLS may test personnel at any time.

5. **INSURANCE:** The agency must provide proof of professional liability insurance coverage to West Michigan Regional Medical Consortium Medical Control Authority. Coverage must be a minimum of two million dollars ($2,000,000) per occurrence, $10 million umbrella.

6. **FIELD PERSONNEL:** List all personnel who have completed MCA training and certification requirements (see **Medical Control Privileges Protocol**). Personnel roster should include, at minimum, name, MDHHS license number and expiration date, applicable certification(s) and expiration date(s), and successful written and practical test date (as applicable). Prior to MCB final review, there should be sufficient personnel listed at appropriate license levels to staff the number of units specified, on a twenty-four (24) hour-a-day, seven (7) day-a-week basis. The first unit requires six (6) fully

cleared personnel. Provisional status for personnel is not available to a new service prior to final approval.

7. **DISPATCH PROTOCOL:** Please explain how you plan to comply with **Ground Ambulance Service Dispatch** Protocol. Submit a system diagram of your communication system. Include frequencies and location of transmitters in dispatch center and include your back-up system.

8. **TRANSMIT AND RECEIVE CAPABILITY:** List all vehicular radio transmit and receive capability maintained by all of your units. Include frequencies and CTCSS designation. Include a letter of compliance with the Michigan EMS Medical Communications Plan, for the planned service area, after review by Department communications consultant.

9. **MUTUAL AID AGREEMENTS:** List all mutual aid agreements and attach copies to your application. If no mutual aid agreement, explain provisions for adequate back up.

10. **PROFESSIONAL STANDARDS REVIEW ORGANIZATION (PSRO) AND TRAINING:** Describe how the service will comply with West Michigan Regional Medical Consortium MCA PSRO, personnel and training requirements. Describe your service's CQI program, who is in charge, and your new personnel orientation program. Describe your personnel continuing education program. Describe your projected maximum and average response time within the proposed service area.

11. **REFERENCES:** Provide a complete list of governmental agencies, facilities and organizations for which you have provided service in the last five (5) years and permission to contact them for references.

12. **DOCUMENTED CLINICAL NEED:** For any proposed transporting service and for proposed non-transport service at the ALS level, describe the clinical need for the new service and its impact on the existing EMS care delivery system.

    For any Ambulance Operation, whether public or private, seeking to replace an incumbent provider within the West Michigan Regional Medical Consortium Medical Control Authority, it is necessary to evaluate any issues or concerns of the overall system design in the MCA. While the MCA recognizes the right of each community to

evaluate and determine which provider may best serve their needs, consideration of the impact of any changes in system design must also include a thorough review and analysis of the consequences, if any, on the prehospital EMS system as a whole in the MCA. Ambulance operations seeking to expand their geographic emergency service area within the MCA are required to provide the MCA with justification, taking into consideration any operational or clinical impact on the overall system design.

13. **OTHER CONSIDERATIONS:** Include at this point any factors you wish the Medical Control Authority to consider when reviewing this application.

ADDITIONAL INFORMATION

Per Life Support Agency Credentialing Paragraph E: Provisional approval allows field personnel to participate in West Michigan Regional Medical Consortium MCA procedure clearance and testing. Applicant agencies will have 60 days from notification of provisional approval by the MCB to complete minimum requirements for unit staffing as required by the MCA.

Prior to operation in the West Michigan Regional Medical Consortium MCA a service must complete the minimum requirements for at least one (1) vehicle. Once an application is approved, additional units may be added as needed, provided the service meets the same standards as the first vehicle and personnel have met the testing requirements.

Communications, procedures and protocols will meet criteria as established by the Department and MCA. Radio field testing may consist of the Medical Director, or designee, doing an operational test of communications capability within and about the requested geographic area of service. A typical test would be driving the perimeter of the geographic area of service and testing communications capability every mile, with a 90% success rate required for approval (see **Communications** Protocol).

Services to West Michigan Regional Medical Consortium MCA will be on a twenty-four (24) hour-a-day, seven (7) day-a-week basis for at least one (1) unit.

Prospective ALS/BLS/MFR service providers should submit the application in electronic format and provide a minimum of twenty-five (25) copies of their application to the MCA.

MFR & Basic EMT Epinephrine Study
Epinephrine Kit Contents and Exchange Procedure

The cooperating hospital pharmacy will stock the epinephrine medication kits in accordance with the BLS medication kit contents list.

Medication / Item	Concentration	Packaging	Quantity
EPI-KIT			
Epinephrine (Vial)	1 mg/1 ml	1 mg/1 ml vial ***(vial only)***	1
Luer lock syringe		1 ml	2
Intramuscular Needle (safety needle ONLY)		1" 25 Gauge	2
Alcohol Prep		Single Use	4
BEES Dosing Card			1
Replacement Form	Not Needed		1

Procedure:

A. The medications placed in the kits shall be consistent throughout the stock as to dosages and concentrations.
B. Contents of a kit will be placed into a plastic baggie with a label applied such that it is obvious if the kit has been opened.
C. Labels shall include the following information
   1. The name of the hospital pharmacy which last restocked the box.
   2. The date the kit was stocked.
   3. The legible initials of the pharmacist who stocked, and initials of the person verifying, the kit contents
   4. The earliest date at which any medication would expire.
D. Epi Kits will be provided to all participating licensed life support units.
E. Kits are to be kept in a safe, temperature controlled location.
F. Kits are to be inspected for integrity, fluid clarity and expiration at least weekly and documented on vehicle inspection reports.
G. Epinephrine kits will also be stocked in each of the blue drug bags, in use on transporting ambulances.
H. When non-transport personnel utilize an Epinephrine kit, they should replace the kit with the one from the ambulance blue bag. The used kit (with unused supplies ONLY) should be placed into the blue bag. The BEES CARD must remain in the used kit for reuse in newly stocked kits.
I. Sharps (needles) must be disposed of in a sharps container promptly after use.
J. Caution must be taken with the use, securing and disposal of needles. Any puncture to a provider from a used needle must be reported as an exposure.

K. MFR/BLS epinephrine kits which expire within 30 days should be replaced with a newer kit from a responding ambulance blue bag, even if Epinephrine was not used for a patient.
L. The transporting ambulance shall leave the pocket with the expiring or used kit unsealed when turned into the pharmacy.
M. Pharmacies shall inspect all contents of open, unsealed drug bag pockets for medication or kit use or expiration. Sealed compartment labels should be inspected for completeness and expirations. Pharmacies may open sealed drug bag pockets or kits at their discretion for inspection and verification of contents.
N. MFR/BLS personnel administering epinephrine MUST complete the requisite study paperwork/audit in addition to completion of the ePCR.

STEMI and STROKE ALERT POLICY

The purpose of this policy is to provide a clear and succinct verbal cue during EMS to hospital communications of patient conditions which will require the activation of specialized resources within the hospital.
This policy is limited to the conditions listed and must be used in coordination with the radio communications procedure for the format of reports. Direct (not relayed) and early contact with on-line Medical Control is required for these Alerts.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
x			x		x	x
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
x	x	x	x	x	x	

I. STEMI ALERT:

A. The declaration of a STEMI Alert is to be based on the following criteria:
   1. Patient has <u>signs and symptoms of an Acute Coronary Syndrome (ACS)</u>
   2. Evidence of STEMI based on *12 Lead EKG*
      a. One or more of the following are present
         1) ECG shows 1 mm or more of ST elevation in 2 or more contiguous limb leads or 2 mm or more of ST elevation in precordial leads, in the absence of Bundle Branch Block.
         2) P-waves precede QRS complexes and QRS is wider than 120ms (0.12 seconds) – report must include both the STEMI alert and the presence of BBB
         3) ST depression, indicative of reciprocal change, is present in at least two contiguous leads
         4) ECG machine reads ***ACUTE MI SUSPECTED*** or equivalent
            Paramedic does not dispute machine interpretation
            i. Misinterpretation due to artifact or irregularity
            ii. Improper lead placement
      b. Evaluate for conditions which may mimic STEMI, if unable to determine if these conditions are present, default to the STEMI alert. If a mimic is found, direct contact with on-line medical control is required as it is for the STEMI patient.
         1) Paced Rhythms
         2) Idioventricular rhythms
         3) Ventricular Tachycardias
         4) Frequent PVC's
         5) Left Ventricular Hypertrophy
         6) Ventricular Aneurism
         7) Benign Early Repolarization
         8) Pericarditis
         9) Hyperkalemia

B. Per the local MCA Radio Communication plan, notify the destination hospital at the start of the report of the STEMI Alert

C. Counties with ECG transmission capability- All 12 Lead EKGs with evidence or suspicion of STEMI/ACS must be transmitted, regardless of destination.
D. State the evidence for the STEMI Alert
   1. Signs and symptoms suggestive of STEMI
   2. ECG findings: STEMI Location
   3. Time of onset of ACS symptoms
   4. Current Pain level
   5. Machine interpretation findings
   6. Cardiologist name or group (Important in some MCA's for alerting the proper cardiology group)
   7. Other standard report components, including estimated time of arrival

E. In documentation of the case on the PCR, include all that apply in specific data fields (if provided) or in the narrative: Paramedic Interpretation of STEMI; Paramedic Agreement with Machine Interpretation of STEMI; Paramedic Disagreement with Machine Interpretation of STEMI

II. STROKE ALERT:

A. For cases where a patient presents with signs and symptoms indicative of stroke, CVA or TIA, the report must be initiated with the phrase **"Stroke Alert"**.
   1. Patient has signs and symptoms consistent with stroke
   2. Even if symptoms appear to be resolving, the "stroke alert" terminology is to be used.
B. Per the local MCA Radio Communication plan, notify the destination hospital at the start of the report of the STROKE Alert
C. State the evidence for the STROKE and pertinent information
   1. Facial Droop
   2. Arm Drift
   3. Speech slur
   4. Onset time of symptoms with duration (last known well)
   5. Other standard report components, including estimated time of arrival

Communications Policy

The purpose of this policy is to provide the means and expectations for EMS communications with hospitals in the WMRMCC area, to include radio frequencies, channels and recorded phone lines, in compliance with the state Medcom plan.

I. General Alert from EMS to hospitals:

A. EMTrack and EMResource

1. EMTrack is expected to be utilized as a means for providing hospitals with a preliminary notification of all inbound patients going to the Emergency Department.
2. EMTrack notification should be entered prior to departure from the scene, when possible. If unable, provide the hospital with radio notification and then enter the call into EMTrack after hospital arrival and include “EMTrack entered after patient delivered” in the notes.
3. Participating hospitals are expected to maintain operational sessions of EMTrack and EMResource for the receipt of incoming patient notifications and for monitoring of and response to alert messages.
4. Dispatch agencies or ambulance agencies, or both, are expected to maintain operational sessions of EMTrack and EMResource for the purposes of monitoring hospital availability and for the receipt of alert messages.
5. Some dispatch entities may be tasked with the creation of event notifications within EMResource for the purposes of MCI, disaster or significant event notifications.
6. EMS personnel are accountable for the proper use of the EMTrack notification system.
7. EMTrack notification of a hospital for low acuity patients (Alpha, Bravo and Charlie patients, unless specifically required to provide a radio report) is sufficient to meet the medcom requirement of hospital notification.

B. Audible Communication with hospitals

1. Only designated and recorded communications methods should be utilized for compliance with statutory requirements.
2. In addition to EMTrack notifications, radio reports or phone calls are required for all ECHO and DELTA level patients and if any of the following apply (when in doubt, call):
   a. CHARLIE level trauma patients
   b. Any time approval is needed, by protocol, for medications or procedures
   c. Whenever there are two or more patients in the back of the ambulance
   d. ALL STROKE and STEMI patients
   e. Unusual situations
   f. Patients needing isolation or decontamination (DECON)
   g. If there is a possibility of the hospital diverting the patient

3. Audible reports (radio or phone) shall generally include:
   a. Patient severity level
   b. ETA
   c. Age, gender
   d. Chief complaint and history of chief complaint
   e. Significant physical and test findings
   f. Vital signs
   g. Treatment provided, requested treatments, if any, and response to treatment
   h. Additional trauma patient information: current anticoagulant use and pertinent comorbidities

C. Audible Communications between dispatch and EMS units

1. All licensed EMS vehicles and dispatch centers are required to have the following federal VHF interop channels.

Frequency	Input	Type	Tone	Alpha Tag	Description	Mode	Tag
155.75250		BM	156.7 PL	**VCALL10**	VCALL10 - Calling	FMN	Interop
151.13750	159.47250	RM	156.7 PL	**VTAC11/36**	VTAC11/36 - Tactical/Repeater	FMN	Interop
154.45250	158.73750	RM	156.7 PL	**VTAC12/37**	VTAC12/37 - Tactical/Repeater	FMN	Interop
158.73750	159.47250	RM	156.7 PL	**VTAC13/38**	VTAC13/38 - Tactical/Repeater	FMN	Interop
159.47250	151.13750	RM	156.7 PL	**VTAC14/33**	VTAC14/33 - Tactical/Repeater	FMN	Interop

2. When agencies with primary radio systems which are incompatible (mismatch of VHF, UHF or 800) must work together, the federal VHF interop frequencies will be utilized, unless another method of establishing interoperable communications has been put into place.

3. EMS vehicles equipped for operation on UHF for dispatch or hospital communications shall have the following channels programmed into their radios (base, mobile and portable).

Frequency	Input	Type	Tone	Alpha Tag	Description	Mode	Tag
453.21250	458.21250	RM	156.7 PL	UCALL40/40D	UCALL40 - Calling	FMN	Interop
453.46250	458.46250	RM	156.7 PL	UTAC41/41D	UTAC41 - Tactical	FMN	Interop
453.71250	458.71250	RM	156.7 PL	UTAC42/42D	UTAC42 - Tactical	FMN	Interop
453.86250	458.86250	RM	156.7 PL	UTAC43/43D	UTAC43 - Tactical	FMN	Interop

4. When all agencies responding to an event have UHF communication capability, the federal UHF interoperability channels should be utilized, unless another method of interoperable communication has been put into place.

5. EMS agencies operating on the 800MHz band shall have the following 800MHz federal interop channels programmed into their radios (base, mobile and portable)

Frequency	Input	Type	Tone	Alpha Tag	Description	Mode	Tag
851.01250	806.01250	RM	156.7 PL	8CALL90/90D	8CALL90 - Calling	FMN	Interop
851.51250	806.51250	RM	156.7 PL	8TAC91/91D	8TAC91 - Tactical	FMN	Interop
852.01250	807.01250	RM	156.7 PL	8TAC92/92D	8TAC92 - Tactical	FMN	Interop
852.51250	807.51250	RM	156.7 PL	8TAC93/93D	8TAC93 - Tactical	FMN	Interop
853.01250	808.01250	RM	156.7 PL	8TAC94/94D	8TAC94 - Tactical	FMN	Interop

6. When all agencies responding to an event have 800MHz capability, the federal 800MHz interop channels should be utilized, unless another method of interoperable communication has been put into place.

7. Establishment and dissemination of the method for interoperable communications is the responsibility of the primary dispatch agency having jurisdiction over the event or incident.

When not established by dispatch, the Medical Branch Director may establish or delegate the establishment of the interop channel.

8. During an event which crosses MCA borders and where participating EMS services have incompatible dispatch and on-scene communications capabilities, the primary dispatch agency, or the primary medical dispatch agency, responsible for management of the event shall communicate out to the regional response agencies on EMResource and via CHREG6 the radio frequency and channel being used for medical response and on-scene communications.

9. If a response agency is unable to communicate on the assigned frequency or channel(s), that agency or dispatch shall make contact directly by phone with the agency having primary responsibility for the event and shall, cooperatively, establish a means of establishing interoperable communication.

10. All EMS dispatch centers shall have the capability to communicate minimally on VHF, and 800MHz. Dispatch centers where UHF is used as the primary method of communication with ambulances must have the capability to communicate on UHF.

11. All hospital emergency departments which receive patients from EMS must have the capability to receive and record HERN (VHF) and phone communications via the dedicated phone number. Hospitals must have the capability of receiving and recording either UHF or 800MHz communications from ambulances, or both, depending on the communications systems in place with ambulances which transport to that hospital.

Communications Platform by County and Hospital - WMRMCC

VHF – (HERN) all hospitals transmit on 155.34 PL 97.4 or none. Mobiles should use “carrier squelch” on receive.

County	*Hospital*	*HERN*	*Sq. Tone*	*UHF Med Channel*	*Freq. TX*	*TX PL*	*Freq. RX*	*RX PL*	*800 MHz*	*Phone*
Allegan	Allegan General Hospital	155.34	173.8	Not Used					03AGH	269-673-9602
Allegan	Borgess Pipp Hospital	155.34	77.0	Not Used					03PIPP	269-685-9200
Barry	Pennock Hospital	155.34	114.8	Not Used					08PENN	(269) 945-3497
Clare	Mid-Michigan Medical Center - Clare	155.34	127.3	Not Used					18HOSP	(989) 386-9411
Ionia	Sparrow - Ionia Hospital	155.34	136.5	Not Used					34MD911	(616) 523-1727
Isabella	McClaren Central Michigan	155.34	156.7	Not Used					37MCA	(989) 772-6777
Isabella	Mid-Michigan Medical Center – Mount Pleasant	155.34	143.0	Not Used					37MMMP	(989) 773-0299
Kent	Spectrum Health - Helen DeVos	155.34	192.8	2	468.025	*331*	463.025	*331*	41MED6	(616) 391-5319 xt 3
Kent	Mercy Health - Saint Mary's	155.34	141.3	5	468.100	*192.8*	463.100	*97.4*	41MED2	(616) 685-3077
Kent	Mercy Health - Saint Mary's **SW**	155.34	141.3	9	467.950	*192.8*	462.950	*97.4*	41MED1	Radio Only
Kent	Metro Health Hospital	155.34	91.5	4	468.075	*632*	463.075	*632*	41MED3	(616) 252-6900
Kent	Spectrum Health - Blodgett	155.34	79.7	1	468.000	*192.8*	463.000	*97.4*	41MED4	(616) 391-5319 xt 2
Kent	Spectrum Health - Butterworth	155.34	192.8	2	463.025	*192.8*	463.025	*97.4*	41MED5	(616) 391-5319 xt 1
Mason	Spectrum Health - Ludington	155.34	SCQ	Not Used					53HOSP	(231) 845-1144
Mecosta	Spectrum - Big Rapids	155.34	118.5	Not Used					54HOSP	(231) 592-1610
Montcalm	Sparrow - Carson Hospital	155.34	94.8	Not Used					59MEDCC	(989) 584-6339
Montcalm	Sheridan Community Hospital	155.34	203.5	Not Used					59MEDCC	(989) 291-6350
Montcalm	Spectrum Health - Kelsey	155.34	179.9	Not Used					59MEDCC	(616) 391-8012
Montcalm	Spectrum Health - United	155.34	146.2	Not Used					59MEDCC	(616) 391-8010
Muskegon	Mercy Health - Hackley	155.34	110.9	6	468.1250	167.9	463.1250	97.4	61MED1	(231) 720-1912
Muskegon	Mercy Health - Mercy	155.34	127.3	4	468.0750	167.9	463.0750	97.4	61MED2	(231) 720-1912
Newaygo	Spectrum Health - Gerber	155.34	107.2	Not Used					62HOSP	(231) 924-1301
Oceana	Mercy Health - Lakeshore	155.34	206.5	Not used					64HOSP	(231) 861-3058
Osceola	Spectrum Health - Reed City	155.34	131.8	Not Used					4367MCA	(231) 832-8522
Ottawa	Holland Hospital	155.34	103.5	7	468.1500	151.4	463.1500	151.4	70MED1	(616) 494-4120
Ottawa	North Ottawa Community Hospital	155.34	91.5	8	468.1750	151.4	463.1750	151.4	70MED2	(616) 847-5310 (ER)
Ottawa	Spectrum Health - Zeeland	155.34	186.2	1	468.0000	151.4	463.0000	151.4	70MED3	(616) 748-3657

Bolded frequencies are primary, light colored frequencies are not currently used or monitored.

Communications Platform by County and EMS Agency – WMRMCC

County	*Agency*	*UHF*	*VHF/UHF Freq. TX*	*TX PL*	*VHF/UHF Freq. RX*	*RX PL*	*800 MHz*	*Phone*
Allegan	Wayland Area EMS	Available, not Primary						(269) 792-2958 (station) (269) 673-3899 (ACCD)
Allegan	Life EMS - Allegan	Available, not Primary					03LIFE (primary) 03UIC1-14, 03911E, 03911W	(269) 673-2225 (269) 673-3899 (ACCD)
Allegan	Plainwell Area EMS	Not Available					03PAEMS	(262) 685-0880 (station) (269) 673-3899 (ACCD)
Allegan	American Medical Response							(616) 459-8197
Barry	Castleton – Maple Grove, Nashville Amb.	Not Available	151.265	186.2	154.235	186.2		(269) 209-0728 (station) (800) 968-4865 (BCCD)
Barry	Thornapple Township EMS	Not Available	151.265	186.2	154.235	186.2		(269) 795-3350 (800) 968-4865 (BCCD)
Barry	Mercy Hastings							(800) 968-4865 (BCCD)
Clare	Mobile Medical Response							(800) 232-5216
Ionia	Life EMS - Ionia		468.2000	192.8	463.2000	97.4	Not Used	(616) 727-5433 (616) 527-8822 (ICCD)
Ionia	Portland EMS		159.285	179.9	151.205	131.8		(517) 526-0470 (616) 527-8822 (ICCD)
Isabella	Mobile Medical Response							(800) 232-5216
Kent	AMR - Kent						Not Used	(616) 459-8197
Kent	Life EMS		468.200	*192.8*	463.200	97.4	Not Used	(616) 458-5433
Kent	Rockford Ambulance						41RAAM	(616) 866-2293
Kent	N Emergency (n/o 10 mile)	8	468.175	*192.8*	463.175	*192.8*	41EMER (Full County)	
Kent	N Emergency - backup	8e	468.175	*173.8*	463.175	*192.8*	41EMS (MCI Ground)	
Kent	S Emergency (s/o 10 mile)	6	468.125	*251*	463.125	*251*	41HOSP (MCI Hosp)	
Kent	S Emergency - backup	6e	468.125	*503*	463.125	*251*	41MCA (MCI Alternate)	
Lake	Life EMS – Lake							(231) 745-5433
Mason	Life EMS - Newaygo		458.175	167.9	453.175	167.9	43EMS?	(231) 845-5433
Mecosta	Mecosta County EMS							(231) 796-2626
Montcalm	Montcalm County EMS						59M911 (EMS) 59COM (Dispatch)	(989) 831-3500 (Central Dispatch) (989) 831-0838 (EMS Supervisor)
Muskegon	Professional Med Team (north)	10					Not Used	(231) 720-1911 (Dispatch (231) 720-1912 (MedCom)
Muskegon	Professional Med Team (south)	10					Not Used	(231) 720-1911 (Dispatch) (231) 720-1912 (MedCom)

Communications Platform by County and EMS Agency – WMRMCC

Muskegon	White Lake Ambulance Services	VHF	150.77500	107.2	155.26500	107.2	Not Used	(231) 728-2312 (dispatch) (231) 894-4306 (station)
Newaygo	Life EMS - Newaygo		458.175	167.9	453.175	167.9	Not Used	(231) 928-5433
Oceana	Oceana County EMS – Mason Oceana 911						64911 & 64EMS	(231) 869-5858
Osceola	Osceola County EMS							(231) 832-6152
Ottawa	Ottawa County Sheriff Department							(616) 738-4000
Ottawa	North Ottawa Community Hospital - EMS	VHF (NOCH Dispatch)	155.325	192.8	155.325	97.4	Not Used	(616) 842-3600 (616) 847-5333 (Dispatch) (616) 842-6800
Ottawa	AMR - Ottawa		467.96250	127.3	462.96250	127.3	Not Used	(616) 459-8197
Ottawa	Life EMS - Ottawa		468.2000	192.8	463.2000	97.4	Not Used	(616) 458-5433
Ottawa	Grand Haven Twp Fire Rescue		458.7750	118.8	453.7750	118.8	Not Used	(616) 842-5988

System Participation Criteria for Adult and Pediatric Trauma Facilities

The intent of this policy is to establish a standard for the verification and designation of trauma facilities within the WMRMCC Medical Control Authority (MCA) areas.

I. Currently verified and /or designated trauma facilities

A. A hospital requesting to participate in the MCA as a Level I, Level II, Level III, or Level IV Adult or Pediatric Trauma Facility must meet one of the following criteria:

1. Verified by the American College of Surgeons, as either an Adult or Pediatric Level I, Level II, or Level III Trauma Center.
2. Designated by the state of Michigan as a Level III or Level IV trauma center

II. Facilities not current verified or designated but requesting provisional status

A. A facility not currently an ACS verified or state designated site that would like to be added to the protocol as a participating provisional trauma facility for up to 18 months while completing the verification or designation process must meet all of the following:

1. Be an active MCA Participating Hospital (to facilitate Quality Review Activities, communications, and so on).
2. Submit documentation as prescribed in Appendix A
3. If approved by the MCA, the facility will be added to the Destination Protocol as a participating trauma facility, provisionally for up to 18 months and permanently upon submission of proof of ACS Trauma verification or state designation.
4. During the provisional period, the facility shall submit written progress reports to the MCA at 6 and 12 months. When the facility is successfully verified or designated, no further progress reports will be necessary.
5. Complete the verification process no later than 18 months from the approval date of the provisional status request.
   OR
6. If the facility has not been verified/designated within 18 months and requests an extension of provisional status, the facility shall submit an 18-month progress report, along with an explanation for the delay.
   a. The MCA will review the submitted materials and determine if the provisional status should be extended for an additional 6 months.
7. Notify the MCA immediately if the hospital:
   a. Withdraws from the verification process
   b. Fails to achieve the ACS requirements to become a Level I, II, or III trauma center
   c. Fails to achieve the state designation for a level III or IV.

III. Review process for applications

A. The MCA director/designee will review the application to ensure that all required documents have been submitted.
B. The MCA director/designee will convene a review panel composed of members of the currently verified Level I and Level II trauma centers, and the MCA Medical Director.
    1. This panel will review the application, assess the level of compliance with the essential elements consistent with state requirements and make recommendation for approval of provisional status, approval contingent upon submission of additional documentation, or disapproval of request.
C. The Medical Director will present the panel's recommendation to the MCA Board which will vote on the recommendation
D. The Medical Director will notify the Regional Trauma Network (RTN) of any facility approved for provisional status.
E. The WMRMCC will modify the Destination Policy to include the provisional facility and will communicate this information to the local and regional transporting EMS agencies and hospitals.

IV. Review process for progress reports

A. The MCA will send the facility the progress report form template and provide due dates for submission.
B. The MCA will send an electronic copy of received progress reports to the review panel for evaluation and approval. If any concerns arise, the panel may be reconvened.
C. The MCA will report on the evaluation and approval of ongoing provisional status to the MCA Board.

V. Revocation of Provisional status

A. If the provisional status is revoked for any reason, the MCA Medical Director will inform the RTN

VI. Successful Verification or Designation

A. Upon submission of documentation of successful verification or designation, the WMRMCC will make any needed changes to the Destination Policy
B. The MCA Medical Director will inform the RTN of successful verification or designation.

Appendix A

MCA submission requirements for provisional trauma facility status

A. Requesting provisional Level I or II

1. Submit completed copy of current ACS PRQ for Level I or II trauma facility.
    i. Do not submit CME certificates or board certificates.
2. Submit letter of request for provisional status indicating intended level, anticipated consultation visit date (if applicable), and intended verification date.
    i. This letter must be signed by the CEO or President of the facility and the Trauma Medical Director

B. Requesting provisional level III

Submit the Request for Provisional Status Application for Level III Trauma Center (current version available from KCEMS)

C. Requesting provisional level IV
(N/A in Kent county)

Evidentiary Blood Draw Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
	X				***X***	

Purpose
Life Support Agencies may allow Paramedics working for them to draw a sample specimen of blood as allowed under 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, treatment will be provided under protocol.

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: *A separate and specific room or area, which is not a freestanding medical facility, in the jail or a police department that is designated to be used for medical purposes where a paramedic obtains a blood sample or specimen (e.g. room at the County Jail or Temporary Holding Facility, 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
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 applies to agencies that have the appropriate training to perform the services and have an executed Agreement in place with a Law Enforcement agency(ies) to provide this service and is done 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 blood draw kit from law enforcement officer and only use the provided contents within the kit for collection.
2. Sample shall be obtained in the presence of a law enforcement officer.
3. Do not use alcohol or alcoholic solutions to sterilize skin surface, needle or syringe.
4. 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.
5. Complete blood specimen label(s) by entering name of subject, date and time of blood collection, and your name in ink.
6. 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.

EMTrack® Utilization Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
	X		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Purpose:
EMTrack® is a web-based application that is used throughout the State of Michigan, by each Region, to track patients from their point of entry into the medical system until they reach a hospital, or transfer between facilities, or for evacuation tracking. EMTrack® collects patient information and relays that information to the destination facility, along with any sent photos (vehicle damage, stroke assessment, 12-leads, labs, etc.), scanned driver's licenses, and notes.

EMTrack® is HIPAA compliant at both the point of origin and the point of receipt of the inbound patient notification (IPN).

Data entry and access:

A. Hospitals receiving EMS patients and participating on-duty EMS units within the region be logged into EMTrack 24/7/365.

B. EMTrack® input
   a. EMS is required to input an EMTrack® whenever a patient will be transported to a hospital ED from a scene
   b. EMS is required to input all interfacility transfers which begin at one hospital and end at another hospital ED
   c. EMS should input all interfacility transfers which begin at one hospital and end at another hospital but to a location other than the ED (cath lab, labor and delivery, burn center, radiology, or direct admit to a room, etc.)
   d. EMS should input all transfers from hospitals to long term care facilities and transfers between long term care facilities.

C. Required fields for entry
   a. Select the most appropriate data form for the patient type
   b. Incident involvement – Daily Tracking followed by the current year
   c. Complaint category – choose the appropriate and accurate chief complaint/illness/injury
   d. Notes – provide any data the hospital needs to know about the patient
   e. Date of birth is required
   f. Destination Location
   g. ETA

D. Optional fields
   a. Patient identifying information allows hospitals to pre-register patients and pull old records. Since the application is HIPAA safe, when information is available, these fields should be completed.
   b. Vital signs and measurements
   c. Sepsis assessment – must be used when transporting a sepsis patient
   d. Stroke assessment – select the CPSS or LAMS form to complete the stroke assessment used by local hospitals
   e. Trauma assessment – used for all trauma patients (select anatomy, mechanism and special considerations)

User Access:
User access to the system has been established through the Regional Healthcare Coalition and is based on company affiliation. New personnel needing access at an existing agency or hospital should contact their Emergency Department Manager, Disaster Preparedness Manager/Coordinator or Dispatch Supervisor.

A. EMS units are assigned general PIN access where login is accomplished through the agency/unit identifier and an assigned PIN. PIN access does not permit viewing of PHI once entered.
B. Password level access may, depending on the assigned role, allow access to PHI. Data entered into the system exists under the same policy and statutory protections and confidentiality requirements as do other patient care records.
C. If the need arises to have additional users added for a facility, please contact the Region 6 office.

Application Access:
Current users may access the EMTrack® web application by doing a browser search for EMTrack® login (in case the link changes in the future). Once there, enter your username and password/PIN. A mobile application is also available for free download to mobile devices. EMS units may have a local install the application if internet connectivity is unreliable. Login is the same for all methods of application access.

EMTrack® Patient Notifications:
EMResource® is the primary program through which Inbound Patient Notifications (IPN) alert in those Emergency Departments set up to receive these notifications.
A. ONLY ED's should be set up to receive inbound patient notifications for their hospital.
B. Hospital ED's must have EMResource® active 24/7/365 to receive IPNs and alerts.

User guides are available for hospital users and for EMS providers on utilization of EMTrack® and EMResource®.

Questions:
Contact your Regional Healthcare Coalition Coordinator's office if you have questions.

EMResource® Utilization Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
	X		X		X	X
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	X		X	X	X	

Purpose:
EMResource® is a web-based application that is used throughout the State of Michigan, by each Region, to promote communication between all medical disaster preparedness participants.

The Region uses this application for notifications of bed availability at hospitals, as well as for event monitoring and updates, both pre-planned and spontaneous. Region 6 contracts with Life EMS to provide for EMResource® event creation and updates. Regional office staff and the WMRMCC manage the program, conduct testing and exercises, and approve and implement changes to the program, with state approval.

The system is used to track and provide notifications of Openings, Diversions, and Closings of local hospital and other healthcare facilities. **EMResource®** is also used to provide immediate notification of HAZMAT and MCI events to all participants. EMResource is a mandatory communications platform for medical disaster communications and patient notifications. Adoption of the MCI protocol obligates MCA participants to this standard.

Application Access:
Current users may access the EMResource® application by doing a browser search for EMResource login (in case the link changes in the future). Once there, enter your username and password. EMResource® has both a web and a mobile platform.

Data Entry and Access:
A. **Hospitals** receiving EMS patients within the Region shall be logged into EMResource 24/7/365.
   1. Hospitals are responsible for updating the current status.
   2. If a hospital ED goes on diversion or closes to EMS, the hospital must update their status and post comments related to the diversion or closure.
   3. Hospitals are responsible for acknowledging IPNs and alert messages.
   4. Hospitals are responsible to complete required bed polls or bed status updates as soon as is possible.

B. **EMS dispatch centers** within the Region shall be logged into EMResource 24/7/365.
   1. EMS dispatch centers shall use EMResource® as a reference board for informing transporting EMS units about individual hospital diversion or closure status.
   2. EMS agencies shall develop a policy or plan for communicating hospital diversion and closing to their on-duty personnel.
   3. EMS dispatch is responsible to relay bed status polls to on-scene medical command or transport. Dispatch may assist with transport destination decisions based upon bed availability, hospital status, proximity to the event and patient information.

C. **EMS Units/Individual Providers** are not currently permitted to log into EMResource®, nor do they have any reporting requirements within EMResource®.

D. **MCC, MCA's and Medical Representatives** to the EOC may update EMResource®.

Permitted Users:
Users within EMResource® are assigned specific roles. Access to data is defined by the assigned role.

A. **Emergency departments** via general access login with inbound patient notifications - for notifications of inbound patients, situational awareness and alerts
B. **Emergency department managers** without inbound patient notifications - for situational awareness, alerts and personnel management
C. **Hospital management** - for situational awareness, bed polling, family reunification, alerts and personnel access to the program
D. **Emergency management** (hospitals) - for situational awareness, family reunification, alerts and reporting
E. **PSAP entities** - for situational awareness and alerts
F. **Emergency management programs** - for situational awareness and alerts
G. **EMS dispatch centers** - for situational awareness, alerts, hospital openings and closings and event creation
H. **Long term care facilities** - for situational awareness, alerts, bed polling and resource requests
I. Individual EMS providers are not provided with access

User Access:
User access to EMResource® has been established through the Regional Healthcare Coalition and is based on company affiliation. New personnel needing access at an existing agency or hospital should contact their Emergency Department Manager, Disaster Preparedness Manager/Coordinator or Dispatch Supervisor.

If the need arises to have additional users added for a facility, please contact the Regional Healthcare Coalition office.

Routine use:
The most common use of the application is to alert EMS agencies and other local hospitals as to the Openings, Diversions and Closings of any hospital Emergency Department.

Once facility updates are entered, notifications are sent to all participants based upon preset notification settings.

- Current Status Descriptions
  - **Open:** **(Without comments)** This indicates that the hospital Emergency Department is open to all EMS traffic ***which that hospital normally accepts*****.**
  - **Open:** **(With comments)** This indicates that the hospital Emergency Department is open to all EMS traffic, <u>but</u> the comments section is used to provide additional information.
  - **Divert:** This status indicates that a hospital cannot accept certain specific patients. Diversions will always be quantified in the Comments section. Text entered here will detail the specific types or priorities of patients who should be diverted to other facilities.

    <u>Call for Ortho</u> – means that no patients with orthopedic injuries should be taken to the hospital without direct contact with and approval from the hospital.

    <u>Call if CT indicated</u> – means that no patients with stroke, TIA, head injury or other condition which may require a CT scan should be transported to the hospital without direct contact and approval from the hospital.
  - **ED Closure:** This indicates that the Emergency Department is not taking any patients being brought in by ambulance for initial evaluation and treatment.

EMResource® Event Creation:
Medical Dispatch, PSAP Centers, MCA Personnel or the R6MCC may initiate EMResource events to provide system-wide notification if that agency commits to educating their personnel on proper use of the system for event creation. Those entities not willing or able to enter EMResource events must contact Life EMS for the creation and updates of EMResource events.

Below is a description of the alerts and their meaning.
Any and all alerts which are DRILLS shall include the word DRILL before the Alert type.

Region 6 - HAZMAT ALERT – These alerts use the Hazmat template and the words ADVISORY or CONFIRMED shall be used in the notification. The ADVISORY notification is sent to provide awareness of a potential local Hazmat event. This is a first notice and is intended for awareness only. It will include the event location. Very little information will accompany this level of alert due to the need to confirm information or identify chemicals or symptoms, if any. The purpose of this alert level is to generate awareness and may modify practices.

- Emergency Responders should avoid traveling through potential hot or warm zones
- If in the proximity of a hospital, assess for the need to activate HERT teams, consider implementing a change to the air handling system if there is an indication to do so

Each HAZMAT ALERT shall be followed by an update which shall include:

- If the event is CONFIRMED, ADVISORY or FALSE
- Location
- Number of patients, if any
- Chemicals, if known
- If chemical is unknown but the route of exposure is known, provide that information (unknown gas) along with symptoms
- NIOSH Guidebook number, if known
- If information is provided by Incident Command about any needed decon or precautions.

An Event Closing and Summary shall end the event
The summary shall include the event location, what was actually found, number of patients transported, number evaluated and released, and number deceased, if any.

Included Recipients:

- PSAPs
- Emergency Management
- Hospital Emergency Management designated personal
- Ambulance Service dispatch and designated personnel
- Medical Control Authority designated personnel

KENT COUNTY - AIRPORT ALERT (Gerald R. Ford International Airport - GRFIA)
An airport alert shall be issued using EMResource by the contracted ALS provider receiving airport alert notifications from the GRFIA communications center.

Small aircraft: An aircraft capable of carrying no more than 9 passengers. (This includes most General Aviation aircraft.)

Large aircraft: An aircraft capable of carrying 10 or more passengers. (This includes all commercial airline aircraft, air cargo jet aircraft, and large corporate jets such as the Canadair Challenger, Falcon 900/2000, and Gulfstream G-II/III/IV/V.)

ALERT 0: Indicates a problem with a small aircraft – including a crash. (No mutual-aid response).

ALERT 1: Indicates a small aircraft has crashed on or near the airport, or a crash is imminent (Mutual aid fire and limited medical/police response).

ALERT 2: Indicates a problem with a large aircraft. (Mutual-aid fire and limited medical/police response)

ALERT 3 Indicates a large aircraft has crashed on or near the Airport, or a crash is imminent (Mutual-aid fire and full medical/police response)

If an actual crash occurs, the initial Airport alert will be followed with an MCI alert. There are different notification levels within EMResource, the MCI alert reaches a broader group. Even if all parties of the event appear to be deceased, this qualifies as an event of significance requiring notification.

Included Recipients:
- PSAPs
- Emergency Management
- Hospital Emergency Management designated personal
- Ambulance Service dispatch and designated personnel
- Medical Control Authority designated personnel
- AeroMed

MCI INCIDENT (Regional Template)
The MCI alert, titled as ADVISORY, is a broad alert intended primarily for notification of an event for initial awareness. If actual, and with patients who will be transported, the MCI alert will be followed by an MCI Confirmation and the declared EMS Plan level.

These alerts use the MCI template and the words ADVISORY or CONFIRMED shall be used in the notification. If the event is real but there are no known patients, updates will be provided using the MCI template. (Significant event but no patients)

Included Recipients:
- PSAPs
- Emergency Management
- Hospital Emergency Management designated personal
- Ambulance Service dispatch and designated personnel
- Medical Control Authority designated personnel
- AeroMed

EMS ALS SYSTEM UPDATE (Region 6 Announcement – Select EMS Agencies Only)
This alert is intended for information sharing amongst ambulance services only. The intent is that this would be used to communicate non-emergent information, of common interest to all of the ambulance services at one time and through the alerting process. (E.g., notification of protocols going into effect at a particular time, changes in processes, hospital entrance or access changes, etc.)

Intended Recipients:
- Medical Control Authority
- Ambulance services
- AeroMed

SIGNIFICANT EVENT NOTIFICATION – (Region 6 Announcement – Select Appropriate recipients)
In the event of an incident which poses a threat to the community, a significant weather alert or any event of which emergency preparedness personnel should be aware, this alert may be used.
Examples:
- Flooding
- Significant vehicle chases
- Multiple deaths from a single cause
- Events reaching significant media coverage
- Highway closures
- Explosions, large fires

Included recipients: **(May select recipients when alert is created)**
- PSAPs
- Ambulance Services
- Hospitals
- Emergency Management
- Fire services
- Medical Control Authority
- AeroMed
- MelTrotter Facility
- Long Term Care Facilities

Other Healthcare Facilities using EMResource:
EMResource may be used for other system-wide communications and tracking purposes including:
- LTC evacuation and resource management
- Pediatric bed management
- Psychiatric care facility bed availability

EMTrack® Patient Notifications:
EMResource® is the primary program through which Inbound Patient Notifications alert in those Emergency Departments set up to receive these notifications. ONLY ED's should be set up to receive inbound patient notifications for their hospital.

User guides are available for hospital users and for EMS providers on utilization of EMTrack® and EMResource®.

Additional Information:

EMResource® is a robust application with many other capabilities including mapping, reports, form submission, document inclusion, Instant Messaging and many other capabilities. For a complete list of these functions and instructions on their use, please sign into **EMResource®** and select the Help Icon in the top right corner of the page. A complete help guide is available to guide one through these features.

Questions:

Contact your Regional Healthcare Coalition Coordinator's office if you have questions.

Date: **October 2, 2020** Section 8.48

WMRMCC – Emergent Interfacility Transfer Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
	X		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*		*X*	*X*	*X*	

A. Purpose

The *Emergent Interfacility Transfer Policy* is intended to clearly define when ambulance services may consider requests from sending facilities, for the interfacility transfer of a patient, to qualify as an "emergency" and thus be handled as would a 9-1-1 scene call and use the last ambulance in their coverage area.

B. Definitions

For the purpose of this protocol, an "Emergency Interfacility Transfer" is for patients who are deemed:

- hemodynamically unstable, or
- critically ill, or injured with an immediate life, limb or sight threatening condition
- *AND* requiring an immediate *time-dependent intervention* that is not available at the sending facility.

C. Policy

1. If a sending facility contacts an ambulance service for the provision of an emergency interfacility patient transfer, they must complete the WMRMCC Interfacility Patient Transfer Checklist or similar form and send to transporting agency's communication center or provide to the transporting ambulance.
2. An emergent request meeting the established criteria shall be prioritized as an emergent response for the ambulance for the purpose of resource assignment. Ambulances will respond without the use of lights and sirens unless the condition is unstable or deteriorating AND there is a need to circumvent significant traffic delays and obstructions.
3. First responders shall not be sent unless specifically requested by the sending facility.
4. The ambulance personnel transporting the patient shall adhere to the Lights and Siren for Transport protocol. The sending facility has no authority to define the mode of transport.
5. Any request for emergent transfer determined to be based upon non-factual information for the purposes of obtaining faster transfer service for a non-emergent patient shall result in notification of the local medical control authority.
6. If an Emergency Interfacility Transfer is called to a local ambulance service, and that ambulance service does not have the capacity to respond to the transfer in a timely manner, as they would an emergency call, then a mutual aid ambulance may be requested by the local ambulance service, dispatch, or the sending facility to facilitate the emergent interfacility transfer, per MCA approved process.

Date: **October 2, 2020** Section 8.49

Interfacility Transfer Mutual Aid Policy

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X	*X*		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*		*X*	*X*	*X*	

Purpose

The **Interfacility Transfer Mutual Aid Policy** establishes the conditions under which an agency, not privileged within the MCA in which an interfacility transfer begins or ends, may provide transfer service under a mutual aid request. *This protocol is specifically meant to address the Michigan Attorney General Declaratory Ruling 7072.*

Procedure

A state licensed Advanced Life Support Agency may provide critical care or interfacility transfer service to a patient being sent from a facility outside of their privileging MCA and to a destination facility outside of their privileging MCA, when all of the following conditions are met:

- If an interfacility transfer request is called to a local ambulance service, and that ambulance service does not have the capacity to respond to the transfer in a timely manner, then a mutual aid ambulance may be requested by the local ambulance service, dispatch, or the sending facility to facilitate the interfacility transfer, per MCA approved process.
- Life support agencies should utilize mutual aid when resources are not available and make every effort to ensure timely responses to transfer requests in a manner which is mutually acceptable to all parties.
- The quality improvement oversight of mutual aid interfacility transfers shall be shared between the MCAs in which the transfer begins or ends and the MCA from which the transferring service originates.
    - If substandard care is identified, the involved MCAs will determine which MCA will investigate. Any resultant remediation, education or punitive actions shall be enacted by the privileging MCA. Privileging MCA will be the investigatory MCA.

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Medications

Table of Contents

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Medications

Table of Contents

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
      4. Right Route
      5. Right Time
      6. Right Documentation
   B. Following administration of controlled medications, EMS personnel shall follow their individual department's policy on the correct accounting, disposal, and restocking of these medications.

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.
   C. Pediatric patients will never be given a single or total dose that exceeds the maximum single or total adult dose.

Medication Administration Addendum

Purpose: **The WMRMCC adopts the state *Medication Administration* protocol with the following additions.**

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X			*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

I. Medication Cross-Check

A. The EMS Provider intending to administer a medication must verbally state to another person the intended medication name, concentration and intended dose, even if the person hearing cannot verify that the dose is correct.
B. The person providing verification should confirm that the label of the medication matches what is verbalized as being the name and concentration of the medication, when possible.
C. Reference materials are encouraged.

II. Documentation

A. Documentation of the cross-check shall be included in the chart for each medication administered.
B. Documentation of medication administration on the ePCR shall include the medication name, dose administered, administration time, route and justification (protocol, on-line, on-scene order).
C. Document waste of controlled substances with witness signature
D. Medication effect should be documented

III. Medication Errors and near misses

A. In the event of a medication error, a report must be made to the agency supervisor and the receiving hospital with the transfer of patient care.
B. All medication errors must be reported to the Medical Control Authority
C. Medication errors and near misses must be reported via the website at www.wmrmcc.org under the *Submit a Report>Report a Medication Error or Near Miss* link on the left.
D. Any "near miss", where an error was almost made, must be reported to the agency supervisor and to the MCA; the web form should be used.
E. Any medication error which is reported immediately by the provider, except in cases of gross negligence or willful misconduct, shall not result in suspension or revocation of privileges. If discovered by the agency or medical control authority after the fact, no such exemption will be considered.

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:

1. Medications indicated in the primary protocol are not available.
2. No other medication is listed in primary protocols as accepted by the MCA for use.

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	Alternate A	Alternate B	Protocols
Atropine	Epinephrine 2-10 mcg/min infusion Pediatric 0.1 mcg/kg/min	Transcutaneous Pacing	**Bradycardia**
Amiodarone	Lidocaine 1-1.5 mg/kg IV Pediatric 1 mg/kg IV	Procainamide 20 mg/min, max 17 mg/kg IV/IO Pediatric 15 mg/kg IV/IO over 60 minutes	**Adult and Pediatric Cardiac Arrest – General** **Adult and Pediatric Tachycardia**
Calcium Chloride	Calcium Gluconate 20 ml of 10% solution administered over 1 to 2 minutes IV (adults only)		**Poisoning/Overdose** **Cardiac Arrest – General (Adult)**
Dextrose 50%, 50 ml	Dextrose 10%, 250 ml IV Pediatric Dextrose 10% 5 ml/kg IV	Glucagon 1 mg Pediatric 0.05 mg/kg, up to 1 mg IM	**Adult and Pediatric Altered Mental Status** **Adult and Pediatric Seizures**
Diphenhydramine	Famotidine 20 mg IV Pediatric 0.25 mg IV Or Ranitidine 50 mg IV Pediatric 0.1 mg/kg IV	Hydroxyzine 50 mg IM Pediatric 0.1 mg/kg IM	**Allergic Reaction**

Lidocaine	Amiodarone: 1. For Recurrent VF/VT: Adults 300 mg IV/IO repeat 150 mg one time. Pediatrics 5 mg/kg IV 2. Wide complex Tach 150 mg x 2 PRN, pediatric 5 mg/kg IV	Procainamide 20 mg/min, max 17 mg/kg IV/IO Pediatric 15 mg/kg IV/IO over 60 minutes	**Adult and Pediatric Cardiac Arrest – General** **Adult and Pediatric Tachycardia**
Morphine	Fentanyl 1 mcg/kg	Hydromorphone 2 mg IV or IM Pediatric 0.05 mg/kg max dose 2 mg	**Pain Management**
Fentanyl	Morphine 4 mg IV/IO Pediatrics 0.1 mg/kg IV	Hydromorphone 2 mg IV or IM Pediatric 0.05 mg/kg max dose 2 mg	**Pain Management**
Midazolam (Versed)	Lorazepam 2 mg or 0.05 mg/kg IV	Diazepam 5 mg IV Pediatric 0.1 mg/kg	**Adult and Pediatric Seizures** **Patient Sedation** **Excited Delirium**
Ondansetron (Zofran)	Promethazine 12.5 mg IM Pediatric 0.25 mg/kg IM	Compazine 10 mg Pediatric 0.1mg/ kg	**Nausea/Vomiting**
Diazepam (Valium)	Midazolam 5 mg IV Pediatrics 0.1 mg/kg	Lorazepam 2mg IV Pediatrics 0.1 mg/kg IV	**Adult Seizures**
Ketamine	Midazolam 5 mg IV Pediatrics 0.1 mg/kg	Fentanyl 1 mcg/kg	**Patient Sedation** **Excited Delirium**
Midazolam	Patient Sedation: Ketamine 0.2 mg/kg IV/IO slowly Excited Delirium Adults only 4 mg/kg IM	Lorazepam 2mg IV Pediatrics 0.1 mg/kg IV	**Patient Sedation** **Excited Delirium**
Epinephrine 1mg/10ml	**Epinephrine 1mg/1ml 30mL Vial** 1. Expel 1mL of normal saline from a 10mL syringe (pre-filled) 2. Instill 1mg(mL) of Epinephrine 1:1,000 from 30 mL vial in to pre-filled syringe 3. 30mL vials are to be single patient use only		
	Epinephrine 1mg/ml Ampule 1. Expel 1mL of normal saline from a 10mL syringe (pre-filled) 2. Instill 1mg(mL) of Epinephrine 1:1,000 from ampule in to pre-filled syringe		

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)*

B. Criteria:

1. Each EMS Medication Management System (MMS), 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. Each MMS shall maintain a dated listing of alternative medications which are approved as substitutes or replacements for medications which are in shortage.
3. Due to the frequency of 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
4. Both the standard list and the alternate list (may be combined into a single document) shall be made readily available to system participants
5. The MMS shall enact policies/procedures which guide each of the following:
   A. Recognition of medication shortages and a means to report them
   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
   a. ***Alternate medications*** will be indicated by the placement of a sticker, tag or label on the outside of the bag or box; on the compartment where the alternate medication is located (if applicable) such that one inspecting the bag or box could easily recognize that the medication was included and what the missing medication it is intended to replace was. (Stickers GREEN or WHITE with GREEN)
   b. ***Missing medications*** will be signified by the placement of a sticker, tag or label on the outside of the bag or box, on the compartment where the missing medication would be located (if applicable) such that one inspecting the bag or box could easily recognize that the medication was missing and what the potential alternate medication was. (Stickers YELLOW or WHITE with YELLOW)

E. A method for dissemination of information related to changes made to the MMS 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/MMS 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. Alternate form and alternate medications may be enacted as an emergency protocol according to statute and state approval, in the event of imminent shortage.
3. 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.
4. 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. Process:

1. A brightly colored ALTERNATE DOSE sticker/tag MUST be attached to the outside of the drug bag, box or narcotics box that lists the effected medication, the concentration of the substituted medication, the expiration date of the medication and the pharmacy name/date.
2. A brightly colored – MISSING MEDICATION sticker/tag must be placed on bags/boxes when a protocol medication is not available to stock in that bag/box.
3. A dosing/instruction card may be required to be included in the bag/box depending on the change.

4. Pharmacies experiencing shortages must provide notification of the need to utilize alternate dosing to the MCA and the drug exchange coordinator, and receive approval, prior to any change being implemented.
5. Drug bags, boxes or narcotics boxes with alternate dose medications/missing medications should have the medication replaced and the sticker/tag removed by pharmacy as soon as possible when the proper medication or concentration of medication is available.
6. Any additional equipment, which is needed to deliver the medication, must be included with the alternate dose. *(I.e. – Medication is typically in a carpuject but a vial is being substituted due to shortages of the carpuject version. An appropriately sized safety needle and syringe must be available within close proximity to the medication in order to facilitate administration. These supplies too may be removed when the proper medication concentration is returned to the bag/box.)*
7. EMS Agencies receiving notice of the utilization of alternate dosing, alternate medications or missing medications due to shortage must post the changes and ensure that all providers that may have cause to use the medications are made aware of the changes 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.
8. Any Special Instruction for a particular shortage will be communicated to all effected pharmacies and EMS services.

Intranasal Medication Administration (Optional)

☑ 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 optional procedure authorizes intranasal medication administration by paramedics (and other levels of licensure, for naloxone) using an FDA-approved atomizing device. This procedure authorizes the substitution of the intranasal route for other routes specified in individual protocols as approved for specific indications stated below by the local medical control authority.

Indications: In general, the intravenous route is preferred for medication administration. This procedure may be considered when IV access is unavailable and when a needleless delivery system is desired because of patient agitation, combativeness, or similar conditions that may pose a safety risk to personnel.

CHECK MCA APPROVED INDICATION

☑ Pain Management
☑ Altered Mental Status with Suspected Opiate Overdose
☑ Sedation
☑ Seizures

1. Select desired medication and determine dose (See Medication Table).
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 snuggly against nostril aiming slightly upward and outward.
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 cc.

Indication	Medication
Suspected Opiate Overdose	Naloxone (1mg/1mL)
Sedation/Seizures	Midazolam
Adult Pain Control	Fentanyl
Adult Pain Control/Sedation	Ketamine
Pediatric Pain Control	Fentanyl
Pediatric Sedation/Seizure	Midazolam
Pediatric Pain Control/Sedation	Ketamine

Pharmacy Drug Box and IV Kit Exchange Policy

Purpose: The purpose of this policy/procedure is to provide accountability and uniformity for the management of EMS medications and medication exchange.

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X	*X*		*X*		*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

I. Participants

This policy applies to all hospital pharmacies, EMS agencies and MCAs participating in the West Michigan Regional Drug Bag Exchange.

II. Pharmacy Responsibilities

A. The pharmacy is responsible for ensuring that re-stocked EMS drug bags, IV kits and narcotics boxes are available to EMS units who bring in a used bag/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".

B. Pharmacies are responsible for providing a secure environment for restocked drug bags, IV kits and narcotics boxes awaiting pickup by an EMS unit and for used bags/boxes brought back for restocking.

C. Upon receiving a used bag/box from an EMS service, the pharmacy will check to assure that the documentation of medication use is in the bag/box or other designated location. Narcotics boxes will be sealed with red seals and the seal numbers must match the included Narcotics Box Restocking Form. The documentation will be checked by the pharmacist against the remaining contents of the bag/box to assure accountability for all medications.

D. Discrepancies found on pharmacy inspection of the bags and/or narcotics boxes should be reported through the WMRMCC website. This includes missing medications and supplies, improperly or unlabeled bags, trash left in bags and any contaminated items or unsecured sharps left in the bags.

E. The pharmacy will replace the used contents of the drug bag and/or narcotics boxes, and verify that all supplies and medications listed on the medical control authority drug box inventory form are present. The bag/box will be sealed and secured utilizing tamper proof numbered seals.

F. The refilled drug bag and narcotics boxes will then be relabeled with a pharmacy label which contains, at a minimum:

- The full hospital name
- The name or initials of the pharmacist checking the box
- The date the box was restocked and checked.
- The expiration date of the first drug to expire in the bag/box (month/year).
- The tag number of the locks assigned to the box (narcotics boxes only).

(Labels for narcotics boxes must be placed on the box in a visible location.)

G. Drug bag/box contents remain the property of the participating pharmacy. The bag itself is owned by the entity (EMS or hospital) that purchased it and entered it into the system.
H. Medications with a month/year expiration dates must be replaced at least 30 days prior to the indicated expiration month (the medication is considered to expire on the last day of the month). Medications with day/month/year expiration must be replaced 15 days prior to the listed expiration date.
I. Stocking of single-use IV kits must adhere to the single patient use IV kit supply list.
J. All packs or specialized kits must be individually sealed and labeled.
K. All narcotics boxes and drug bags used in the EMS exchange system must be accounted for, minimally, on a monthly basis. On the first Tuesday of each month, each agency or pharmacy having drug bags or narcotics boxes must perform an accounting of bags and boxes between 7AM and 8AM and then log the bag or box numbers into the on-line tracking application between 7AM and Noon.
L. Pharmacies are asked to notify the Drug Bag System Coordinator if areas of potential diversion are identified, along with suggestions for improvement.
M. The WMRMCC may, at its discretion, require other, electronic or more frequent audits of drug bags and narcotics boxes.
N. The Director of Pharmacy, or equivalent, at each participating hospital is responsible for assuring compliance with this policy.

III. EMS Agency Responsibilities

A. The EMS personnel turning in used drug bags and/or narcotics boxes are responsible for ensuring the safety of the bag/box including the removal of all trash, contaminated waste and the securing of all needles, catheters and potential sharps.
B. EMS agencies are responsible for the cleaning of bags that become soiled or contaminated. If you have a bag that needs to be decontaminated or cleaned, you may sign out a replacement and contact the hospital pharmacy to inform them that they will be short a bag until it can be cleaned, and arrange for the medications to be removed by pharmacy. The EMS agency supervisor/admin should notify the Drug Bag System Coordinator of the out of service bag. Once the bag is cleaned and returned, advise both the pharmacy and the Drug Bag System Coordinator that the bag is back in service.
C. EMS agencies are responsible for assuring that the bags in their possession are current and without expired medications, as are listed on the drug bag labels. Bags should not be opened / unsealed unless they are to be used for a patient, for training purposes or at the direction of the Drug Bag System Coordinator for inspections. Unsealed bags must be returned to pharmacy for inspection and restocking/resealing unless otherwise directed. EMS agencies may not reseal bags once opened, unless specifically directed to do so by the Drug Bag System Coordinator.
D. Unsecured, contaminated sharps and biohazard materials left in/on bags may result in disciplinary actions consistent with a level 2 protocol violation.
E. EMS personnel are responsible for the proper labeling of the bag that is being turned in. Failure to properly label used bags may result in the hospital pharmacy billing the agency a restocking fee. Drug bag slips must be filled out completely.
F. If the WMRMCC adopts an electronic method of drug bag accountability, EMS must properly utilize the system for all drug bag exchanges.
G. The EMS agency must provide the hospital pharmacy with a copy of the patient care record, either in printed or electronic form.

H. All applicable sign in/out sheets must be fully completed for both bags and narcotics boxes.
I. All narcotics boxes and drug bags used in the EMS exchange system must be accounted for on a monthly basis. On the first Tuesday of each month, each agency or pharmacy having drug bags or narcotics boxes must perform an accounting of bags and boxes between 7AM and 8AM and then log the bag or box numbers into the on-line tracking application between 7AM and Noon.
J. In the event of medication or narcotics misuse, diversion, loss or misplacement, the agency agrees to work with the MCA and the WMRMCC Drug Bag System Coordinator for investigation and effective resolution of issues.
K. The contents of the drug boxes, narcotics boxes, med kits or EMS agency storage of these items are subject to inspection by participating pharmacy staff, the MCA and the WMRMCC Drug Bag System Coordinator at any time.
L. EMS agency management at each participating agency is responsible for assuring compliance with this policy.

IV. MCA Responsibilities

A. Adoption of this protocol and signing of the WMRMCC drug bag system agreement will allow a MCA to enter into the drug bag exchange system.
B. Participating MCAs are encouraged to communicate with their hospital pharmacies and EMS agencies in order to optimize system performance and accountability.
C. MCAs are encouraged to attend drug bag system meetings and the WMRMCC.
D. MCAs agreeing to participate in the Drug Bag Exchange must agree to enforce the provision of this policy that states, “Unsecured, contaminated sharps and biohazard materials left in/on bags may result in disciplinary actions consistent with a level 2 protocol violation.”
E. MCA’s will, in cooperation with the Drug Bag System Coordinator, assist in investigations of medication or narcotics misuse, diversion, loss or misplacement, and assure effective resolution of issues.

V. Controlled Substance Boxes

A. Narcotics boxes that are received from pharmacy must be sealed with two numbered green seals and must be inspected by the EMS provider who is signing the box out to assure that the box is properly sealed, is inaccessible, and is fully restocked. The seal numbers must be recorded on the Narcotics Box sign-out log, located at the pharmacy, along with other pertinent information at the time that the box is signed out.
B. Pharmacies must record the seal numbers of the red seals that will be enclosed within the narcotics box on the Narcotics Box Use form that will also be enclosed within the green sealed, fully stocked narcotics box.
C. Once opened by EMS, the WMRMCC Narcotics Box Use Form must be completely filled out prior to exchanging narcotics boxes. This includes physician signatures for medications administered and witness signatures for all wasted medication. Wasted medication amounts must also be included in the documentation of the call on the EMS report.
D. All occurrences of broken narcotics must be reported to the pharmacy at exchange and must have an incident report submitted to the Drug Bag System Coordinator.
E. All instances of the wasting of full narcotics must have a reason documented on the Narcotics Use Form.

F. Two red, numbered seals from within the opened box must be used to seal the box prior to bringing the box to the pharmacy or placing the box in a pyxis or locked cabinet. The red seal numbers must match those on the Narcotics Box Use Form enclosed within the box.

G. EMS providers exchanging narcotics boxes at the pharmacy must be in uniform and have valid picture ID including either a driver's license or MCA issued ID.

H. In the event that the Controlled Substance Box, and/or the Controlled Substances become damaged or missing a report must be filed through the WMRMCC website.

1. Notification of missing Controlled Substances will be made immediately to the Pharmacy that issued the controlled substances.
2. The Drug Bag System Coordinator will work with the receiving and stocking pharmacies, and the involved EMS agencies to determine if there is an identifiable stocking, restocking or other non-diversion issue.
3. If diversion is probable, a report of missing controlled substances will be made to the State of Michigan Pharmacy Board and to the U.S. Drug Enforcement Agency by the Pharmacy that last stocked the box.
4. The Medical Control, in cooperation with pharmacies, may elect to require that narcotics waste be tested either randomly or specified criteria (time period, specific medication, specific agency or individual, etc.).
5. Pharmacies may, based on hospital policies, test patients that have received prehospital narcotics for verification of narcotics administration and dosing.

I. The exchange of the Controlled Substance Box must take place prior to going back into service. Under NO circumstance will an open box go into service.

J. The management at each participating EMS agency is responsible for assuring compliance with this policy.

K. All narcotics boxes and drug bags used in the EMS exchange system must be accounted for on a monthly basis. On the first Tuesday of each month, each agency or pharmacy having drug bags or narcotics boxes must perform an accounting of bags and boxes between 7AM and 8AM and then log the bag or box numbers into the on-line tracking application between 7AM and Noon.

Epinephrine Auto-Injector Procedure

Aliases: Epi-Pen ®

Purpose: To allow use of epinephrine auto-injector/pediatric epinephrine auto-injector for life-threatening anaphylaxis by authorized prehospital providers licensed at or above the Emergency Medical Technician level. *If MCA selected, epinephrine auto-injectors are approved for Medical First Responder use.

MCA Approval of Epinephrine Auto-injector for Select MFR Agencies
(Provide List to BETP)
☑ YES ☐ NO

1. **Indications**
   A. Life-threatening allergic/anaphylactic reactions
   B. Use with Allergic Reaction/Anaphylaxis Protocol
2. **Contraindications**
   A. No absolute contraindications to life-threatening anaphylaxis
   B. Caution: Use with caution in patients with heart disease, high blood pressure, and stroke.
   C. Patient weight less than 10 kg.
3. **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: Epinephrine auto-injector (0.3 mg) is used for patients weighing over 32 kg. Pediatric epinephrine auto-injector (0.15 mg) is used for patients weighing at least 10 kg.
   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.
4. **Documentation**
   A. EMS providers will note any changes in the patient's condition and report those changes to on-line medical control and document changes on the run form and complete the Epinephrine Auto-injector Utilization Form.
5. **Accountability**
   A. Epinephrine auto-injectors will be stored in a securely locked 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.

Epinephrine auto-injector Utilization Form
(To be used by Hospital)

Drug	Standard	Quantity	Count	Exp. Date
Epinephrine auto-injector	0.3 mg	1	_____	_____
Pediatric Epinephrine auto-injector	0.15 mg	1	_____	_____

Run Date _____

Patient Name _____

Physician _____

EMT _____

Receiving Hospital _____

Initial Date: 11/15/2012
Revised Date: 10/25/2017

Nebulized Bronchodilators

Indication

1. Patient with respiratory distress and wheezing.
2. When indicated under specific treatment protocol.

MCA Selection for Nebulizer

☑ EMT-B
☑ Specialist
☑ Paramedic

Procedure

1. Obtain vital signs and lung sounds.
2. Place the appropriate volume of medication in the lower half of the nebulizer unit. Then screw the upper half of the unit in place.
3. 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.
4. 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.
5. Set the oxygen liter flow at 6 L/min.
6. Instruct the patient to breathe normally through the mouthpiece, taking a deep inspiration every 4 or 5 breaths.
7. 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.
8. Obtain and record another complete set of vital signs and lung sounds after completion of the treatment.

Medication Dosage

1. Administer Albuterol 2.5 mg/3 ml NS nebulized, if available, repeat as indicated.
2. Administer treatment number one as Albuterol 2.5 mg/3 ml NS and Ipratropium 500 mcg/3 ml NS nebulized if wheezing or airway constriction.
3. Per MCA selection administer additional bronchodilator treatments as Albuterol 2.5 mg/3 ml NS nebulized OR Albuterol 2.5 mg/3 ml NS and Ipratropium 500 mcg/2.5 ml NS nebulized, as needed, if wheezing or airway constriction persists. For patients **age 5 or under**, Ipratropium .25 mg should be given in conjunction with albuterol.

ADDITIONAL BRONCHODILATOR TREATMENTS

☑ Albuterol 2.5 mg/ 3 ml NS
OR
☐ Albuterol 2.5 mg/3 ml NS and Ipratropium 500 mcg/2.5 ml NS

Pediatric Considerations

.. Infants and small children may not be able to use adult mouth piece and may need to use blow-by or pediatric mask.

Naloxone Administration

Aliases: Opioid overdose medication

Indications: Decreased level of consciousness associated with respiratory depression from **Opioid Overdose,** without other apparent cause (e.g., stroke, hypoglycemia).

MCA Selection for Naloxone Administration

☑ MFR ☑ EMT

Procedure:

Consider administration of Naloxone when:

1. Ventilations have been established and patient has not regained consciousness.
2. There is more than 1 rescuer on scene for personnel safety precautions.
3. Treatment goal is to restore effective respirations; the patient need not be completely awakened.
4. Per MCA Selection (below), administer Naloxone intramuscular auto injection OR Intranasal via prefilled syringe with atomizer (half the dose in each nostril), OR Narcan® Nasal Spray. May repeat one time in 3-5 minutes if effective respirations not restored.

MFR/EMT Administration Options (MUST SELECT AT LEAST ONE):

☐ Naloxone Intramuscular Auto Injector 0.4mg IM (Adults Only)

☐ Narcan® Nasal Spray 4 mg (Adults Only)

☑ Naloxone Prefilled-2 mg/2 ml IN via Atomizer

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

5. Administer Naloxone IM, IN or slowly IV, titrating to restore effective respirations.
   a. Adult: 2 mg IM, IN or IV
   b. Pediatric: 0.1mg/kg IM/IN/IV-Refer to the MI-MEDIC Cards for proper dosing.

SPECIALIST/PARAMEDIC Administration Options (Must select at least one):

☑ Naloxone 2.0 mg/2ml IM, or IV
- Adult and child over 3 years: 2ml.
- Pediatric Dosing:
  - Up to 3 months: 0.5 ml
  - 3 months up to 18 months: 1 ml
  - Children 19-35 months: 1.5 ml

☑ Naloxone Prefilled-2 mg/2 ml IN via Atomizer –
- Adult and child over 5 years: 2 ml
  - Distribute half of the dose in each nostril.
  - Up to 3 months: 0.5 ml
  - 3 months up to 18 months: 1 ml
  - Children 19-35 months: 1.5 ml

6. Repeat every 3-5 minutes as needed to restore effective respirations. Note IN Naloxone should only be repeated one time.
7. Treatment goal is restoration of effective respirations; the patient need not be completely awakened.
8. Transport supporting ventilations as needed
9. Notify medical control.

2-Pam Chloride/DuoDote

Protocols:

1. Nerve Agent Organophosphate exposure

Indications:

1. Exposure to organophosphate or nerve agents
2. Given in conjunction with atropine in DuoDote or Mark-1 kit

Contraindications:

1. None

Dosing:

1. Self-Rescue – 1 DuoDote (Mark-1) Injector
2. Mild Reaction
    a. Adults (8 years and over) – 1 DuoDote (Mark-1) Injector
    
    b. Pediatrics – Contact Medical Control
3. Moderate Reaction
    a. Adults (8 years and over) – 2 DuoDote (Mark-1) Injectors
    
    b. Pediatrics – Contact Medical Control
4. Severe Reaction
    a. Adults (8 years and over) – 3 DuoDote (Mark-1) Injector
    
    b. Pediatrics – 1 DuoDote (Mark-1) Injector, Contact Medical Control as needed

Expected Effects:

1. Decrease in symptoms

Side Effects:

1. Blurred vision
2. Headache
3. Dizziness
4. Nausea

Acetaminophen

Protocols:

1. Pediatric Fever
2. Pain Management (per MCA selection)

Indications:

1. Fever
2. Mild pain

Contraindications:

1. Hypersensitivity
2. Known severe acute liver disease

Dosing:

1. Adults – 15 mg/kg PO, maximum dose 1 gm
2. Pediatrics – 15 mg/kg PO, maximum dose 500 mg

Expected effects:

1. Decrease temperature
2. Pain Relief

Side effects:

1. Nausea/vomiting

Adenosine (Adenocard)

Protocols:

1. Tachycardia (Adult and Pediatric)

Indications:

1. Specifically for treatment of Supraventricular Tachycardia.
2. Consider for regular or wide complex tachycardia.

Contraindications:

1. Sick sinus syndrome
2. Hypersensitivity to adenosine
3. 2nd or 3rd degree heart block

Dosing:

1. Adult
    a. 6 mg rapid IV/IO push over 1-3 seconds
    b. Repeat at 12 mg after 1-2 minutes, if no conversion
    c. Medication should be followed by a rapid 30 ml NS bolus
2. Pediatric
    a. 0.1 mg/kg IV/IO rapid bolus. (Max dose 6 mg)
    b. Repeat at 0.2 mg/kg after 2 minutes (Max dose 12 mg)
    c. Medication should be followed by rapid 5-10 ml NS flush

Expected Effects:

1. Slowed conduction through the AV node
2. Conversion to NSR

Side Effects:

1. Hypotension
2. Flushing
3. Dyspnea
4. Light-headedness
5. Nausea

Albuterol (Ventolin®)

Protocols:

1. Nebulized Bronchodilators
2. Crush Injury
3. Adult and Pediatric Respiratory Distress
4. Adult and Pediatric Allergic Reaction/Anaphylaxis

Indications:

1. Bronchospasm (wheezing)
2. Crush injury syndrome with evidence of hyperkalemia

Contraindications:

1. Hypersensitivity to albuterol

Dosing:

1. Adults and pediatric
    a. 2.5 mg in 3 ml NS via nebulizer

Expected Effects:

1. Dilated bronchi
2. Improvement in capnographic waveform (if available)

Amiodarone (Cordarone)

Protocols:

1. General Cardiac Arrest – Adult and Pediatric
2. Tachycardia - Adult

Indications:

1. Recurrent ventricular fibrillation or recurrent pulseless ventricular tachycardia
2. Recurrent hemodynamically unstable ventricular tachycardia
3. Stable ventricular tachycardia in consultation with online medical control

Contraindications:

1. Hypersensitivity to Amiodarone

Dosing:

1. Adult
    a. Cardiac Arrest – persistent shockable rhythm
        i. 300 mg IV/IO
        ii. May repeat one time at 150 mg IV/IO
    b. Tachycardia
        i. Wide complex symptomatic but stable
        ii. 150 mg IV over 10 minutes
2. Pediatric – Persistent shockable rhythm in cardiac arrest
    a. 5 mg/kg IV/IO
    b. Max dose 300 mg
    c. May be repeated up to 2 more times (max total dose 15 mg/kg or 450 mg total)

Expected Effects:

1. Prolongs refractory period
2. Inhibits alpha and beta adrenergic stimulation

Side Effects:

1. Prolonged QT
2. Vasodilation
3. Hypotension

Aspirin

Protocols:

1. Chest Pain/Acute Coronary Syndrome

Indications:

1. Suspected cardiac chest pain
2. Suspected Myocardial Infarction

Contraindications:

1. Hypersensitivity to aspirin or nonsteroidal anti-inflammatories

Dosing:

1. Adult Only Medication
    a. 324-325 mg chewable tablet PO

Atropine

Protocols:

1. Bradycardia (Adult and Pediatric)
2. Poisoning
3. Nerve Agents/Organophosphate exposure

Indications:

1. Symptomatic bradycardia with a suspected vagal origin
2. Exposure to organophosphates or other nerve agents

Contraindications:

1. Known hypersensitivity (no absolute contraindications)

Dosing:

1. Symptomatic Bradycardia
    a. Adult:
        i. Administer 0.5 mg IV/IO every 3-5 minutes
        ii. Max dose 3 mg
    b. Pediatric:
        i. Given ONLY if primary AV block, or if bradycardia is unresponsive to oxygenation, ventilation and epinephrine.
        ii. Administer 0.01-0.02 0.02 mg/kg IV/IO
        iii. Minimum single dose 0.1 mg
        iv. Maximum single dose 1 mg
        v. Repeat prn in 5 minutes, maximum total dose 3 mg
2. Organophosphate/Nerve Agent Exposures
    a. Adults
        i. 2-6 mg IV/IM per Mark 1 Kit Dosing Directive (each kit contains 2 mg of atropine)
        ii. If kit is not available administer 2-6 mg IV/IM as needed
    b. Pediatrics
        i. Infant 0.05-0.1 mg/kg IM/IV/IO (0.2-1 mg), Pediatric Atropen or Vial
        ii. Child 1-4 mg IM/IV/IO, Pediatric Atropen, Vial, or Mark 1

Expected Effects:

1. Increased heart rate
2. Dilated pupils

Calcium Chloride

Protocols:

1. Poisoning/Overdose
2. Crush Injury
3. Cardiac Arrest General – Adult

Indications:

1. Cardiac arrest in the renal failure patient
2. Calcium channel blocker toxicity
3. Crush Injury with suspected hyperkalemia

Precautions:

1. May precipitate digitalis toxicity
2. Extremely important to flush IV line fully after administration

Dosing:

1. Cardiac Arrest
    a. Adult:
        i. 1 gm slow IV
2. Calcium channel blocker toxicity
    a. Adult: 0.5 – 1 gm IV
3. Crush Injury
    a. Adult: 1 gm slow IV over 5 minutes, after extrication

Expected Effects:

1. Increased force of myocardial contraction
2. Rise in arterial pressure

Dextrose

Protocols:

1. Adult and Pediatric Seizures
2. Adult and Pediatric Altered Mental Status

Indications:

1. Hypoglycemia
2. Altered mental status in the absence of a glucometer

Contraindications:

None

Concentration:

1. Dextrose 10% 25 gm in 250 ml
2. Dextrose 12.5% (for patients up to 2 months of age)
    a. Created by expelling 37.5 ml from Dextrose 50% 50 ml syringe and drawing up 37.5 ml of NS
    b. Creates 6.25 gm/ 50 ml concentration of 12.5%
3. Dextrose 25% (for patients between 2 months and 6 years of age)
    a. Created by expelling 25 ml from Dextrose 50% 50 ml syringe and drawing up 25 ml of NS
    b. Creates 12.5 gm/50 ml concentration of 25%
4. Dextrose 50% (prefilled syringe of 25 gm in 50 ml)

Dosing (ensure patent IV):

1. Pediatric (weight based)
    a. 3-5 kg, Dextrose 12.5%, dose: 2.5g, Volume: 20mL or Dextrose 10%, 25 ml
    b. 6-7 kg, Dextrose 25%, dose: 3.25g, volume 13 mL or Dextrose 10%, 33 ml
    c. 8-9 kg, Dextrose 25%, dose: 4.25g, volume 17 mL or Dextrose 10%, 43 ml
    d. 10-11 kg, Dextrose 25%, dose: 5g, volume 20 mL or Dextrose 10%, 50 ml
    e. 12-14 kg, Dextrose 25%, dose 6.25g, volume 25 mL or Dextrose 10%, 63 ml
    f. 15-18 kg, Dextrose 25%, dose 8 g, volume 32 mL or Dextrose 10%, 80ml
    g. 19-23 kg, Dextrose 25%, dose 10g, volume 40 mL or Dextrose 10%, 100 ml
    h. 24-29 kg, Dextrose 50%, dose 12.5g, volume 25 mL or Dextrose 10%, 125 ml
    i. 30-36 kg, Dextrose 50%, dose 15g, volume 30 mL or Dextrose 10%, 150 ml
2. Adult
    a. Dextrose 50%, 25 gm, 50 ml
    b. Dextrose 10%, 25 gm, 250 ml

Incompatibilities/Drug Interactions:

1. Sodium bicarbonate
2. Diazepam will precipitate if given concurrently without flushing

Diazepam

Protocols:

1. As indicated in **Medication Substitution Protocol**

Indications:

1. Seizures when first line medications are not available

Precautions:

1. Respiratory depression
2. Hypotension

Dosing:

1. Adult: 5-10 mg IM/IV
2. Pediatric: 0.2 - 0.5 mg/kg IM/IV

Expected Effects:

1. Skeletal muscle relaxation
2. Ceasing of seizure activity

Diphenhydramine (Benadryl ®)

Protocols:

1. Anaphylaxis/Allergic reaction
2. Poisoning/overdose

Indications:

1. Anaphylaxis
2. Mild or moderate allergic reaction
3. Urticaria

Contraindications:

1. Lower respiratory distress
2. Hypersensitivity to diphenhydramine

Dosing:

1. Adult: 50 mg IM or IV
2. Pediatric: 1-1.5 mg/kg IM or IV

Expected Effects:

1. Antihistamine, decreased urticarial, itching
2. Drowsiness

Dopamine

Protocols:

1. As indicated in the **Medication Substitution** protocol

Indications:

1. Cardiogenic shock
2. Bradycardia with hypotension

Contraindications:

1. Hemorrhagic shock

Dosing:

1. Adults and Pediatric
    a. Mix 400 mg/250 ml (1600 mcg/ml)
    b. Administer 5 – 20 mcg/kg/min, titrated to effect of BP 90 systolic

Expected Effects:

1. Increased BP
2. Increased HR

Epinephrine

Protocols:

1. Anaphylaxis/Allergic Reaction
2. Shock
3. Respiratory Distress (Adult)
4. Pediatric Respiratory Distress, Failure, or Arrest
5. Adult Cardiac Arrest – General
6. Adult Bradycardia
7. Pulmonary Edema/CHF
8. Return of Spontaneous Circulation
9. Pediatric Cardiac Arrest - General
10. Pediatric Bradycardia
11. Neonatal Assessment and Resuscitation

Indications:

1. Anaphylaxis
2. Bradycardia
3. Respiratory distress
4. Hypotension
5. Cardiac arrest

Contraindications:

1. No contraindications in critical patients

Dosing:

1. Epinephrine auto-injector (Protocols 1, 3, 4, MFR per MCA selection in protocol 1)
    a. Adults 0.3 mg, IM
    b. Pediatrics
        i. 0.15 mg, IM
        ii. Pediatric auto-injector indicated for patients greater than 10 kg and less than 30 kg
2. Epinephrine 1mg/1mL (Protocols 1, 3, 4)
    a. Adults 0.3 mg IM
    b. Pediatrics
        i. For patients less than 10 kg contact medical control prior to administration
        ii. For patients greater than 10 kg, administer 0.01 mg/kg, up to 0.3 mg
3. Nebulized (Protocol 4)
    a. Racepinephrine 2.25%
        i. Place 0.5 mL in nebulizer
        ii. Dilute with 3 mL normal saline
    b. Epinephrine (1mg/1mL), 5 mL (5 mg) nebulized

4. Epinephrine 1mg/10mL
    a. IV Bolus (Protocols 5, 9, 10, 11)
        i. Adults 1 mg every 3 to 5 minutes in cardiac arrest
        
        ii. Pediatrics 0.01 mg/kg (0.1mL/kg)

    b. Push dose (Protocols 2, 6, 8)
        i. Prepare by combining 1 mL of Epinephrine 1 mg/10 mL with 9 mL NS
        ii. Adults
            1. Administer 10-20 mcg (1-2 mL Epinephrine 10 mcg/mL)
            2. Repeat every 3 to 5 minutes
            3. Titrate to SBP greater than 90 mm/Hg
        
        iii. Pediatrics
            1. Administer 1 mcg/kg (0.1 mL/kg Epinephrine 10 mcg/mL)
            2. Maximum dose 10 mcg (1 mL)
            3. Repeat every 3-5 minutes

Expected Effects:

1. Decreased wheezing
2. Increased BP
3. Increased HR

Fentanyl

Protocols:

1. Intranasal Medication Administration
2. Pain Management
3. Patient Sedation

Indications:

1. Pain management
2. Patient sedation

Contraindications:

1. Altered Mental Status
2. Hypotension
3. Respiratory Depression
4. Hypersensitivity to Fentanyl

Dosing:

1. Adult
    a. 1 mcg/kg
    b. Single dose up to 100 mcg
    c. May repeat, up to a max dose of 200 mcg
2. Pediatric
    a. 1 mcg/kg
    b. Single dose up to 40 mcg (otherwise dose as adult)
    c. May repeat, total dose up to 80 mcg

Expected Effects:

1. Decreased pain
2. Decreased agitation

Side Effects:

1. Drowsiness
2. Hypotension
3. Respiratory Depression
4. Vomiting

Special Notes:

1. Naloxone will reverse the effect of Fentanyl
2. Administration with Ondansetron for nausea is encouraged

Initial Date: 10/25/2017
Revised Date:

Glucagon

Protocols:

1. Altered Mental Status (Adult and Pediatric)
2. Seizures (Adult and Pediatric)

Indications:

1. Hypoglycemia with inability to obtain IV access

Contraindications:

1. Adrenal gland tumor
2. Hypersensitivity to glucagon

Dosing:

1. Adult: 1 mg IM/SQ
2. Pediatric: 0.05 mg/kg up to 1 mg IM/SQ

Expected Effects:

1. Increased blood glucose

Side Effects:

1. Nausea
2. Vomiting

Hydromorphone

Protocols:

1. Pain Management (MCA Selection)

Indications:

1. Severe pain with extended transport time

Contraindications:

1. Hypersensitivity
2. Hypotension
3. Hypovolemia

Dosing:

1. Adults only 0.5 mg IV/IM
2. IV dose must be administered slowly, over 2 minutes
3. May repeat one time

Expected Effects:

1. Decreased pain

Side Effects:

1. Respiratory depression
2. Hypotension
3. Altered mental status

Cyanokit ® (Hydroxocobalamin)

Protocols:

1. Cyanide Exposure Supplement Protocol

Indications:

1. Known or suspected cyanide poisoning

Contraindications:

1. Hypersensitivity to hydroxocobalamin or cyanocobalamin
2. Can not be administered in the same line as dopamine or fentanyl

Dosing:

1. A two vial kit with 2.5g of hydroxocobalamin each in powder form which must be reconstituted with 100mL of normal saline each, rotated or tipped for 30 seconds each (not shaken) and then administered through its own IV line (not used with any other medications) over 7.5 minutes each.
2. A one vial kit with 5g of hydroxocobalamin powder which must be reconstituted with 200mL of normal saline, be rotated or tipped for 60 seconds (not shaken) and administered through its own IV line (not used with any other medication) over 15 minutes.
3. The starting dose of hydroxocobalamin for adults is 5g (i.e., two 2.5g vials OR one 5g vial) administered as an intravenous (IV) infusion over 15 minutes.
4. Pediatrics:

TWO VIAL KIT (2.5G/100ML)

AGE GROUP	AMOUNT	DOSAGE
INFANT / TODDLER (0-2YEARS)	¼ BOTTLE	0.625G
PRESCHOOL (3-5 YEARS)	½ BOTTLE	1.25G
GRADE SCHOOL (6-13 YEARS)	1 BOTTLE	2.5G
ADULT >14YEARS	2 BOTTLES (ENTIRE KIT)	5G

ONE VIAL KIT (5G / 200ML)

AGE GROUP	AMOUNT	DOSAGE
INFANT / TODDLER (0-2YEARS)	1/8 BOTTLE	0.625G
PRESCHOOL (3-5 YEARS)	¼ BOTTLE	1.25G
GRADE SCHOOL (6-13YEARS)	½ BOTTLE	2.5G
ADULT >14YEARS	1 BOTTLE (ENTIRE KIT)	5G

Expected Effects:

1. Increased blood glucose

Side Effects:

1. Nausea
2. Vomiting
3. Abdominal pain
4. Red colored urine, skin, mucus membranes
5. Rash

Ibuprofen

Protocols:

1. Pain Management (per MCA selection)

Indications:

1. Mild pain
2. Hip fractures

Contraindications:

1. Hypersensitivity
2. Active bleeding
3. <6 months of age
4. Pregnancy

Dosing:

1. Adults – 10mg/kg PO, maximum dose 800 mg
2. Pediatrics – 10 mg/kg PO, maximum dose 400 mg

Expected effects:

1. Pain Relief

Side effects:

1. Nausea/vomiting
2. Abdominal pain
3. Heartburn

Ipratropium Bromide (Atrovent ®)

Protocols:
1. Nebulized Bronchodilators

Indications:
1. Bronchial asthma
2. Bronchospasm in emphysema
3. Chronic bronchitis
4. Other wheezing in adults and pediatrics

Contraindications:
1. Hypersensitivity to ipratropium bromide
2. Hypersensitivity to atropine or its derivatives

Dosing:
1. Adult: 500 mcg/3 ml combined with Albuterol 2.5 mg/3ml, nebulized
2. Pediatric: For children aged 5 or under, Ipratropium 250 mcg should be given

Expected Effects:
1. Decreased wheezing
2. Decreased respiratory distress

Side Effects:
1. Palpitations
2. Dry Mouth
3. Anxiety

Ketamine

Protocols:
1. Excited Delirium
2. Patient Sedation
3. Pain Management
4. Patient Restraint

Indications:
1. Patients with excited delirium
2. Agitation
3. Significant pain

Contraindications:
1. Known hypersensitivity

Dosing:
1. Excited Delirium
    a. Adults only – 4 mg/kg IM
2. Patient Sedation
    a. Adults and Pediatrics
        i. 0.5 mg/kg IN, if available or
        ii. 0.2 mg/kg IV/IO, diluted in 100 mL NS IV bag and administered over at least two minutes.
        iii. Maximum single dose 25 mg
        iv. May repeat after 10-15 minutes to a maximum dose of 2 mg/kg
3. Pain Management
    a. Adults
        i. 0.5 mg/kg IN, if available or
        ii. 0.2 mg/kg IV/IO, diluted in 100 mL NS IV bag and administered over at least two minutes
        iii. Maximum single dose 25 mg
        iv. May repeat after 10-15 minutes to a maximum dose of 2 mg/kg
    b. Contact Medical Control for patients over the age of 65.
4. Patient Restraint
    a. Adults only – 2 mg/kg IM or IN

Expected Effects:

1. Sedation
2. Decreased agitation
3. Decreased pain

Side Effects:

1. Nausea/vomiting
2. Nystagmus

Ketoralac (Toradol ®)

Protocols:
1. Pain Management (per MCA selection)

Indications:
1. Mild to moderate pain

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

Dosing:
1. Adults – 15 mg IM/IV
2. Pediatrics – 1 mg/kg IM/IV (max dose 15 mg)

Expected effects:
1. Pain Relief

Side effects:
1. Nausea/vomiting
2. Bloating

Lidocaine

Protocols:

1. Adult Cardiac Arrest – General (MCA Selection)
2. Adult and Pediatric Tachycardia (MCA Selection)
3. Vascular Access & IV Fluid Therapy (IO placement)

Indications:

1. Alternative to amiodarone in cardiac arrest from VF/VT
2. Alternative to amiodarone in pulsatile VT
3. As an anesthetic agent when administering medications via intraosseous route

Contraindications:

1. Hypersensitivity to lidocaine
2. Bradycardia or heart block

Dosing:

1. Cardiac Arrest (Adult) 100 mg IV/IO
2. Wide complex tachycardia
    a. Adults: 1 mg/kg
    b. Pediatric: 1 mg/kg (only with medical direction)
    c. May repeat after 5-10 minutes to a maximum of 3 mg/kg
3. For conscious patients with pain from IO infusion
    a. Adults: 20 mg IO
    b. Pediatrics: 0.5 mg/kg, maximum dose 20 mg

Expected Effects:

1. Increased VF threshold
2. Decreased ventricular irritability
3. Decreased pain with infusion

Lorazepam (Ativan ®)

Protocols:
1. Adult and Pediatric Seizures
2. Medication Substitution

Indications:
1. Seizures (per MCA selection)
2. Seizures when Midazolam is unavailable

Contraindications:
1. Hypersensitivity to lorazepam
2. Hypotension
3. Respiratory failure

Dosing:
1. Adults: 4 mg IV/IO
2. Pediatrics:
   a. 0.1 mg/kg
   b. Max single dose 4 mg, may repeat to maximum of 8 mg

Expected Effects:
1. Seizure cessation
2. Sedation

Side Effects:
1. Respiratory depression
2. Hypotension
3. Nausea/Vomiting

Magnesium Sulfate

Protocols:

1. Adult Cardiac Arrest - General
2. Adult Tachycardia
3. Adult Respiratory Distress
4. Adult Seizures

Indications:

1. Suspected Torsades de Pointes
2. VF/VT in hypomagnesemia
3. Seizures secondary to toxemia of pregnancy
4. Asthma exacerbation not responding to first line treatments

Contraindications:

1. Hypersensitivity to magnesium sulfate
2. Should not be given for 2 hours preceding delivery

Dosing:

1. Cardiac Arrest (and Wide Complex Tachycardia)
    a. 2 grams diluted in 10 ml NS
    b. Administerd IVP
2. Asthma exacerbation (refractory)
    a. 2 grams diluted in 10 ml normal saline
    b. Administered over 10 to 20 minutes
    c. Administer with open line of normal saline
3. Seizures in pregnancy
    a. 4 grams diluted in 20 ml
    b. Administered over 10-20 minutes
    c. Administer with open line of normal saline

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

Methylprednisolone

Protocols:
1. Anaphylaxis/Allergic Reaction
2. Adrenal Crisis
3. Adult Respiratory Distress
4. Pediatric Respiratory Distress, Failure, or Arrest

Indications:
1. Allergic reactions
2. Airway inflammation
3. Reactive airway disease
4. Acute adrenal insufficiency

Contraindications:
1. Hypersensitivity to methylprednisolone (or similar)
2. Inability to swallow (by age or patient status)

Dosing:
1. Adult 125 mg IV/IO
2. Pediatrics 2 mg/kg IV/IO (max dose 125mg)

Expected Effects:
1. Decreased inflammation

Side Effects:
1. Dizziness
2. Nausea/vomiting

Midazolam (Versed ®)

Protocols:

1. Adult and Pediatric Seizures
2. Excited Delirium
3. Heat Emergencies
4. Patient Restraint
5. Patient Sedation
6. Nerve agent/Organophosphate Pesticide Exposure

Indications:

1. Adult or pediatric seizures
2. Sedation for patients receiving electrical therapy
3. Excited delirium or severe agitation to enable assessment and/or treatment

Contraindications:

1. Hypersensitivity to midazolam
2. Shock

Dosing:

1. Seizures
    a. Adults
        i. 10 mg IM
        ii. 5 mg IV/IO
        iii. May repeat with medical direction
    b. Pediatrics
        i. 0.1 mg/kg IM (maximum dose 10 mg)
        ii. 0.05 mg/kg IV/IO (maximum dose 5 mg)
        iii. May repeat with medical direction
2. Excited Delirium and Chemical Restraint (Adults ONLY)
    a. 10 mg IM **or**
    b. 5 mg IN
3. Patient Sedation (and for tremors in heat emergencies)
    a. Adults
        i. 1-5 mg IV/IO/IN (0.05 mg/kg)
        ii. Titrated slowly
        iii. May repeat once in 5 minutes to a maximum of 0.1 mg/kg
    b. Pediatrics
        i. 0.05 mg/kg IV/IO (max single dose 5 mg)
        ii. Titrated slowly
        iii. May repeat once in 5 minutes to a maximum of 0.1 mg/kg

Expected Effects:

1. Seizure cessation
2. Sedation

Side Effects:

1. Respiratory depression
2. Hypotension

Morphine

Protocols:
1. Pain Management (MCA Selection)
2. Medication Substitution

Indications:
1. Severe pain

Contraindications:
1. Hypersensitivity to morphine
2. Hypotension

Dosing:
1. 0.1 mg/kg
    a. Adults max single dose 10 mg
    b. Pediatrics administer no more than 1 mg in a single dose
2. May repeat
    a. Adults up to 20 mg
    b. Pediatrics up to total dose of 5 mg

Expected Effects:
1. Decreased pain

Side Effects:
1. Respiratory depression
2. Hypotension

Naloxone (Narcan ®)

Protocols:

1. Adult and Pediatric Altered Mental Status
2. Pediatric Respiratory Distress, Failure, or Arrest
3. Poisoning/Overdose
4. Naloxone Administration

Indications:

1. Known opioid overdose with respiratory depression
2. Respiratory depression or arrest of unknown or suspicious origin

Contraindications:

1. Hypersensitivity to naloxone

Dosing:

1. For MFR and EMT-Basic (Per MCA selection)
    a. 0.4 mg IN
    b. 2.0 mg pre-filled syringe IN
    c. 4.0 mg intranasal spray
2. For Specialist and Paramedic
    a. 0.4 mg IN/IM/IV/IO
    b. Repeat as needed
    c. May need larger doses dependent on substance
3. Pediatrics (Specialist and Paramedics Only)
    a. 0.1 mg/kg IV/IO/IM
    b. Max dose 2 mg

Expected Effects:

1. Decreased pain

Side Effects:

1. Respiratory depression
2. Hypotension

Nitroglycerin

Protocols:
1. Chest Pain/Acute Coronary Syndrome
2. Nitroglycerin Drip Supplement (Optional)
3. Pulmonary Edema/CHF

Indications:
1. Chest, arm, or neck pain thought to be caused by cardiac ischemia
2. Pulmonary edema
3. Nitroglycerin drip may be used as a supplement to both above indications when sublingual nitroglycerin has not relieved symptoms and the MCA has both adopted the supplement and trained the providers. The provider must use vented IV tubing and an infusion pump.

Cautions:
1. The presence, or suspicion, of an inferior wall ST Elevation Myocardial Infarction (STEMI)

Contraindications:
2. Use of erectile dysfunction medications within the previous 48 hours

Dosing:
1. MFR and EMT Basic may assist patients with their own sublingual nitroglycerin
2. Sublingual nitroglycerin
    a. 0.4 mg sublingual if BP is above 100 mmHg
    b. May repeat at 3 to 5 minute intervals if pain persists and BP sustains c. May be administered prior to IV start if BP is above 120 mmHg
3. Nitroglycerin IV drip (MCA selection)
    a. Begin drip at 10 mcg/min
    b. Increase by 10 mcg/min at 5 minute intervals, titrating to pain and BP
    c. Maximum dose is 200 mcg/min

Expected Effects:
1. Decreased blood pressure
2. Relief of chest pain

Side Effects:
1. Headache
2. Flushing
3. Hypotension

Ondansetron (Zofran ®)

Protocols:
1. Nausea/Vomiting
2. Pain Management

Indications:
1. Nausea and vomiting
2. Prophylactic use in patients receiving opioids for pain management to prevent nausea/vomiting

Contraindications:
1. Hypersensitivity to ondansetron (or similar)

Dosing:
1. Adult
    a. 4 mg ODT (oral dissolving tablet)
    b. 4 mg IM
    c. 4 mg slow IV (at least 30 seconds, recommended over 2 minutes)
2. Pediatrics
    a. For patients less than 40 kg, 0.1 mg/kg slow IV
    b. For patients greater than 40 kg, 4 mg slow IV
    c. Not routinely give IM in pediatrics, administer over at least 30 seconds, recommended over 2 minutes

Expected Effects:
1. Diminished nausea

Side Effects:
1. Headache
2. Dry mouth
3. Drowsiness

Prednisone

Protocols:
1. Anaphylaxis/Allergic Reaction
2. Adrenal Crisis
3. Adult Respiratory Distress
4. Pediatric Respiratory Distress, Failure, or Arrest

Indications:
1. Allergic Reaction
2. Inflammatory respiratory issues

Contraindications:
1. Hypersensitivity to steroids
2. Known systemic fungal infections

Dosing:
1. Adult (and children over 6 years old ): 50 mg tablet, PO

Expected Effects:
1. Decreased inflammation

Side Effects:
1. Retention of fluids

Sodium Bicarbonate (NaHCO3)

Protocols:

1. Excited Delirium
2. Adult and Pediatric Cardiac Arrest – General
3. Poisoning/Overdose
4. Crush Injury

Indications:

1. Cardiac arrest with suspected hyperkalemia
2. Tricyclic antidepressant (TCA)
3. To cause alkalization in significant acidosis

Contraindications:

1. Hypersensitivity to sodium bicarbonate
2. Severe pulmonary edema
3. Known Alkalosis

Dosing:

1. Adults in Excited Delirium: 50 mEq IV
2. Adult and Pediatric Cardiac Arrest: 1 mEq/kg IV/IO
3. TCA overdose with widened QRS
    a. 1-2 mEq/kg IV/IO
    b. May be repeated to narrow QRS and improve blood pressure
4. Crush Injury: 1 mEq/kg IV/IO, max dose 50 mEq

Precautions:

1. Must flush IV line between medications
2. Administer slowly
3. Only given if acidosis is suspected

Tetracaine Hydrochloride

Protocols:

1. Poisoning/Overdose
2. Chemical Exposure

Indications:

1. Used before/after eye irrigation for pain
2. Chemical exposure to eyes

Contraindications:

1. Hypersensitivity to anesthetics
2. Large area application
3. Infants less than 1 year

Dosing:

1. Adults and Pediatrics great than 1 year odl
    a. 1 to 2 drops per eye
2. May be used before/after flushing eye

Expected Effects:

1. Numbing of eye

Side Effects:

1. Burning
2. Irritation
3. Rash

Tranexamic Acid (TXA) (Optional)

Protocols:

1. Shock

Indications (TRAUMATIC CAUSE ONLY):

1. Evidence of marked blood loss
2. Sustained tachycardia (>110/Min, despite a 500 ml bolus of IVFs)
3. Initial systolic BP < 90
4. Sustained hypotension (<100 systolic, despite a 500 ml bolus of IVFs)
5. Major trauma with suspicion for pelvic and/or abdominal injury
6. Major arterial bleeding not controlled with tourniquet

Contraindications:

1. Hemorrhagic shock from a non-traumatic cause (massive Gastrointestinal or Gynecological bleeding)

Dosing:

1. Adults
    a. 1 g of TXA mixed in 100 ml of normal saline
    b. Administered over 10 minutes
2. Pediatrics (only appropriate inside a formal research study)
    a. 15 mg/kg TXA
    b. Administered over 10 minutes

Precautions:

1. Must be administered within 3 hours of injury
2. Do not delay transport for administration of TXA
3. TXA delivered in the field is a loading dose
    a. It is not effective if a second dose is not given at the appropriate time in the hospital
    b. It is very important that the administering provider make note of the time that the loading dose is given

MUSKEGON COUNTY

Protocols

Protocol Number	Protocol Name
	Special Operations
	Table of Contents
10.1	General CBRNE Identification of Agents
10.2	Chemical Exposure
10.3	Nerve Agent/Organophosphate Pesticide Exposure Treatment
10.4	Chempack/MEDDRUN
10.5	Cyanide Exposure
10.6	Mass Casualty Incidents (MCI)
10.7	Prehospital (EMS) MCA Mutual Aid Agreement
10.8	EMS Immunization & TB Testing
10.9	Suspected Pandemic Influenza
10.18	Active Assailant Policy

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. Definite pattern of casualties and common symptoms
    - 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 or Emergency Care for Hazardous Materials Exposure.
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.
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 the G series of 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))
      *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 the worse the exposure.

2. **Nuclear Agents:** Primary risk is massive trauma and devastation as the result of a large scale blast.
3. **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.

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 Treatment** and **Cyanide Exposure 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. 100% Oxygen
      3. If wheezing, administer Albuterol
         a. 2.5 mg/3 ml nebulized
         b. 2-3 puffs from metered dose inhaler
      4. For severe exposure consider early interventional airway and aggressive ventilatory support. (Evidence of non-cardiogenic pulmonary edema)
      5. 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.
      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.

Nerve Agent/Organophosphate Pesticide Exposure Treatment

Purpose: This Protocol is intended for EMS personnel at all levels to assess and treat patients exposed to nerve agents and organophosphate pesticides. The protocol includes the use of the Mark I/Duo Dote Antidote Kits and the Atropen auto injector for personnel trained in the use of these devices and authorized by the local medical control authority.

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)
   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.

3. Mild Symptoms and Signs:
   A. Threshold Symptoms *plus*:
   B. Constricted Pupils*
   C. Muscle Twitching
   D. Increased Tearing, Drooling, Runny Nose
   E. Diaphoresis
4. Moderate Symptoms and Signs
   A. Any or all above *plus:*
   B. Constricted Pupils
   C. Urinary Incontinence

D. Respiratory Distress with Wheezing
E. Severe Vomiting

5. 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.

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
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. Antidote administration per Mark I Kit/Duo Dote auto injector Dosing Directive – See Chart


4. Establish vascular access


5. Atropine 2-6 mg IV/IM per Mark I Kit Dosing Directive if Mark I Kit is not available (each Mark I Kit/Duo Dote auto injector contains 2 mg of atropine)

6. Treat seizures
   A. **Adult**

a. Administer **Diazepam** 2-10 mg IV/IM **OR** Midazolam 0.05 mg/kg to max 5 IV/IM
b. Administer **Midazolam** 0.1 mg/kg to max 10 mg IM
c. If available, **Valium** auto-injector

B. **Pediatrics**
a. **Midazolam** 0.15 mg/kg IV/IM (maximum individual dose 5 mg)
b. If available, **Valium** auto-injector

7. Monitor EKG

8. Additional **Atropine** 2 mg IV/IM for continued secretions (0.05 mg/kg for pediatrics) 

*NA Kit Dosing Directive				
	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	1 NA Kit (self-rescue)
ADULT PATIENT	**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 1st dose of available benzodiazepine)
PEDIATRI	**Pediatric Patient with Non-Severe Signs/Symptoms**	*Mild or moderate symptoms as above*	Positive evidence of nerve agent or OPP on site	Age ≥8 years old: • As Above Age <8 years old • Per Medical Control

	Pediatric Patient with Severe Signs/Symptoms	• Constricted pupils • Unconsciousness • Seizures • Severe difficulty breathing	Severe breathing difficulty Weakness	Age ≥ 8 years old: • 3 NA Kits Age < 8 years old: • 1 NA Kit Contact Medical Control as needed

***NOTE: Nerve-agent Antidote (NA) =1 Duo Dote or 1 Mark I**

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 EMS, Trauma and Preparedness (BETP), 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 Communications Agency
         a. Primary: Survival Flight 877-633-7786
         b. Secondary: Aero Med: 616-391-5330
   B. Hospital, Public Health, EOC or Emergency Management
      1. Identifies need
      2. Contact MEDDRUN Communications Agency
         a. Primary: Survival Flight 877-633-7786
         b. Secondary: Aero Med: 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).
   B. Contacts the state agency (BETP) Point of Contact: BEEPER: 517-232-0007

III. Storage site notifies the transport unit and moves cache to designated loading area.
   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. BETP 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 BETP 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, BETP and Communications will prepare a Preliminary After Action Report (AAR) using the format prescribed by BETP. (See AAR attachment) BETP will review each AAR with the intent of improving future responses.

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 BETP, will be responsible for ordering the supplies to re-stock the MedPack(s)/Chempack(s) used.

II. BETP 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.*

APPENDIX A –MEDDRUN/CHEMPACK Activation and Deployment Algorithm

Biological, Chemical, Radiological or Mass Casualty Incident

Existing supplies are depleting

Identifies Need for Nerve Agent Antidote Support or Dirty Bomb MEDDRUN / CHEMPACK Supplies

Confers with Incident Commander

Provide Report to Central Dispatch or Hospital

Abbreviations

APOC: Alternate Point of Contact
CSS: CHEMPACK Storage Site
EOC: Emergency Operations Center
EEI: Essential Elements of Information
MCA: Medical Control Authority
MCC: Medical Coordination Center
MI-HAN: Michigan Health Alert Network
NA: Nerve Agent
POC: Point of Contact

Central Dispatch or Requesting Agency

MEDDRUN/CHEMPACK Communication Agency

Primary: 877-633-7786
Secondary: 616-391-5330

First
Deployment Orders to selected MEDDRUN Dispatch and/or CHEMPACK POC/APOC

Second
Contact BETP POC

BETP POC will contact Requesting Agency to authenticate request

BETP POC then contacts Communication Agency to provide confirmation and determines need for additional resources

MEDDRUN / CHEMPACK Communication Agency to provide confirmation or recall deployment

Selected Agency notifies transport personnel and moves desired cache to designated loading area

Notify MCA regarding dispatched transport vehicle

Desired cache is loaded on transport vehicle

Agency delivers supplies to requesting location

Agency returns to service

BETP POC Contacts MSP MIOC
BETP POC Contacts BETP Director

BETP POC Contacts Regional MCC

BETP POC coordinates a MI-HAN Alert consistent with guidelines

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**	**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**	**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**

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.

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 (e.g. Hydrogen Cyanide, Potassium/Sodium Cyanide, 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. Shortness of breath
    A. Generally not associated with cyanosis
    B. Pulse oximetry levels usually normal
    C. Usually associated with increased respiratory rate and depth
    D. Potential for rapid respiratory arrest
2. Chest pain
3. Confusion, decreased level of consciousness, coma
4. Seizures
5. Headache, dizziness, vertigo
6. Pupils may be normal or dilated.

Personal Protection

1. Be Alert for secondary device in potential terrorist incident
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. Evaluate and maintain the airway
2. Provide oxygenation and support ventilation as needed
3. 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.
4. This is in contrast to most triage systems that would categorize non-breathing patients as non-survivable.
5. Establish vascular access
6. Administer antidote:
   a. Cyanokit® (5g. adult; 70 mg/kg pediatric maximum dose 1g.) per **Cyanokit® Protocol** (preferred, per MCA Selection)

Cyanokit® Included?
☑ **Yes** ☐ **No**

   b. Sodium Thiosulfate
      i. Adults: 50 ml (12.5 g) IV over 10 minutes if available
      ii. For pediatric patients: 1.65 ml/kg (12.5 g/50 ml solution) IV over 10 minutes
7. Cardiac monitoring
8. Special Considerations for Smoke Inhalation
   a. 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.
   b. Prior to administration of Cyanokit®, smoke inhalation victims should be assessed for the following:
      i. Exposure to fire or smoke in an enclosed area
      ii. Presence of soot around the mouth, nose or oropharynx
      iii. Altered mental status
   c. The Cyanokit® should be considered for all serious smoke inhalation victims (including cardiac arrest).

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. ***D****etection*: Do we have an MCI? If yes, immediately declare to dispatch.
B. ***I****ncident Command*: Establish or interface with the Incident Command System (ICS)
C. ***S****afety and Security*: Immediate action steps to immediately protect responders, casualties, public.
D. ***A****ssess Hazards*: Actively assess (initially and ongoing) for hazards that can harm responders, casualties, public.
E. ***S****uppor*t: Request resources needed to effectively manage incident
F. ***T****riage and Treatment*: Initiate SALT Triage and provide treatment to casualties
G. ***E****vacuation:* Transport of casualties to appropriate hospitals (avoiding overloading individual hospitals) or alternate treatment centers
H. ***R****ecovery:* 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
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

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

[1] Model Uniform Core Criteria for Mass Casualty Triage. Disaster Med Public Health Preparedness.2011;5:125-128, doi: 10.1001/dmp.2011.41.

obvious respiratory distress, OR they have a life-threatening external 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**

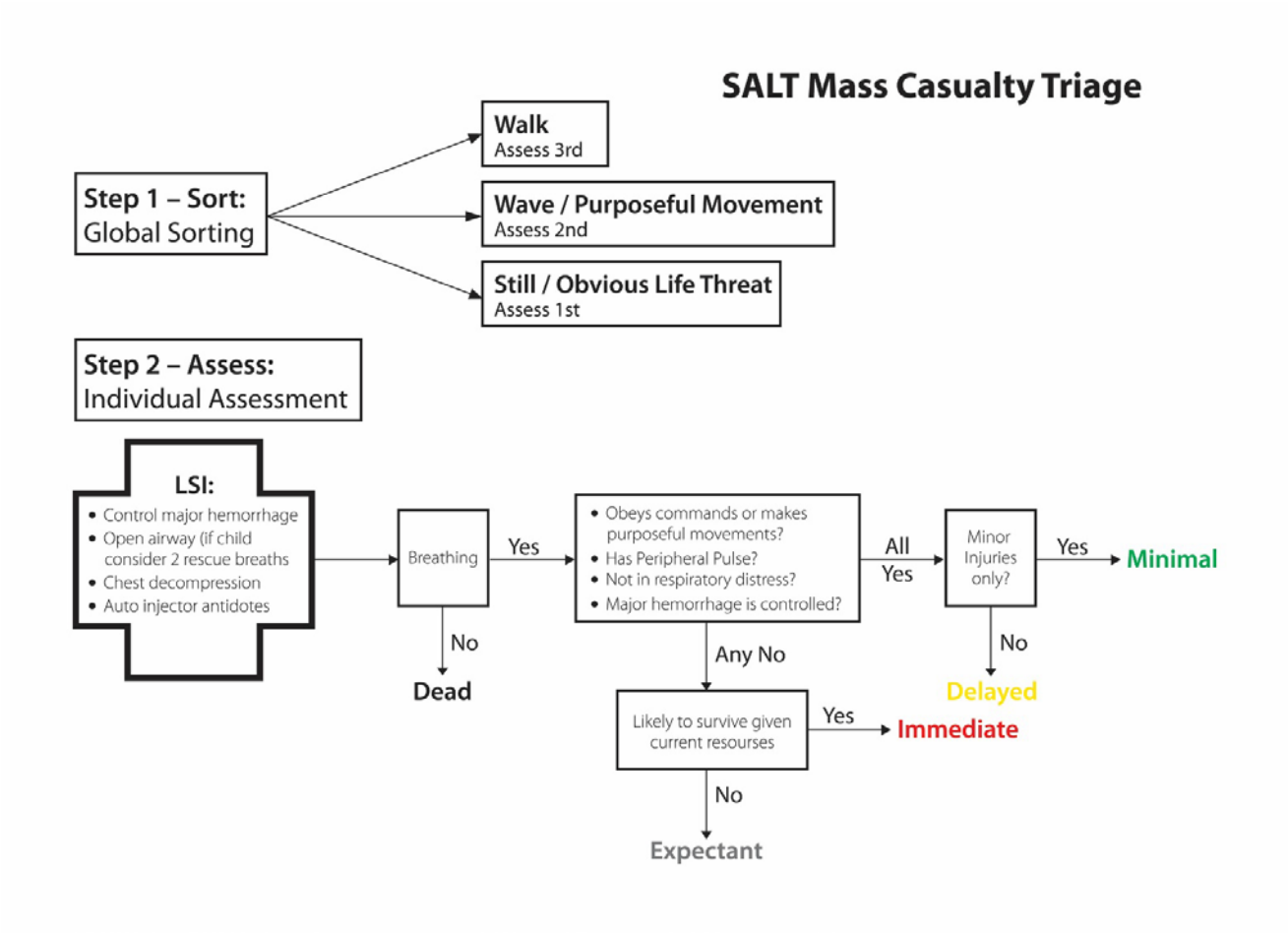
A. Transport Unit Leader should assure all departing ambulances and non-licensed transport vehicles depart scene with highest acuity patients
1. Assure distribution of patients to appropriate hospitals (e.g., trauma centers)
2. Maintain a tracking log of patients, acuities, and destinations

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


SALT Mass Casualty Triage
Step 1 – Sort:
Global Sorting
Walk
Assess 3rd
Wave / Purposeful Movement
Assess 2nd
Still / Obvious Life Threat
Assess 1st
Step 2 – Assess:
Individual Assessment
LSI:
• Control major hemorrhage
• Open airway (if child consider 2 rescue breaths
• Chest decompression
• Auto injector antidotes
Breathing
Yes
No
Dead
• Obeys commands or makes purposeful movements?
• Has Peripheral Pulse?
• Not in respiratory distress?
• Major hemorrhage is controlled?
All Yes
Any No
Minor Injuries only?
Yes
Minimal
No
Delayed
Likely to survive given current resourses
Yes
Immediate
No
Expectant


MINIMAL
DELAYED
IMMEDIATE
EXPECTANT
DECEASED
STAT BAND

XI. REGIONAL MEDICAL COORDINATION CENTER (RMCC)

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:

(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.

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.

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.

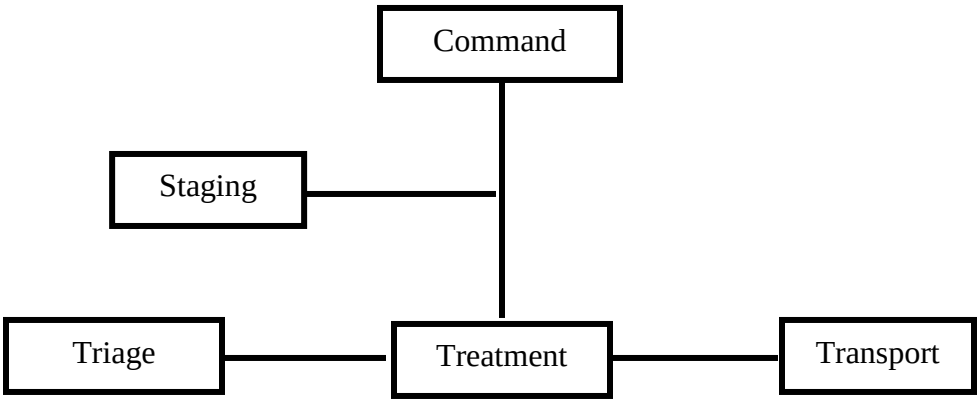
Coordinating Resource: the entity within the local EMS system responsible for the notification and coordination of the mass casualty response. Examples include: medcom, resource hospital, MCA, medical control, dispatch

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).

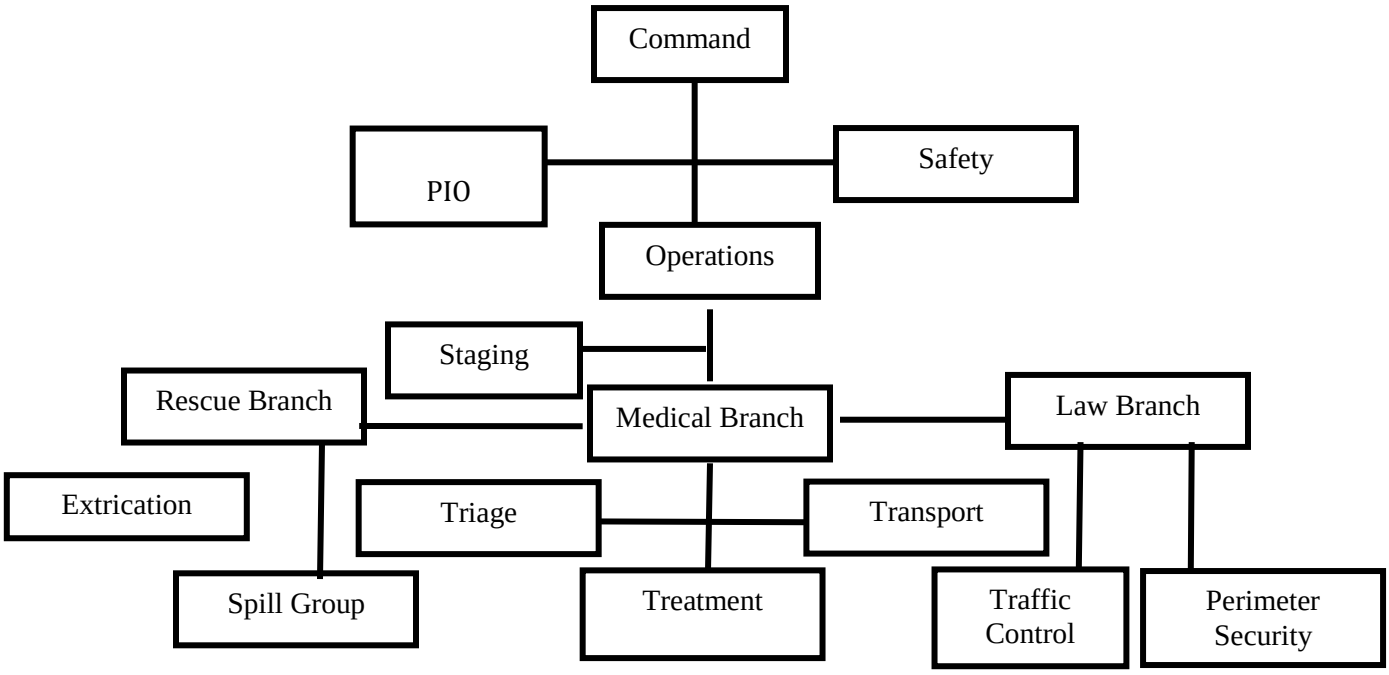
Community Health Emergency Coordination Center: The CHECC serves as a statewide multi-agency coordination entity as defined by NIMS. CHECC is intended to coordinate state-level healthcare and public health resources, to serve as a central point of contact for regional RMCC's, and to serve as a resource 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



Pre-hospital (EMS) MCA Mutual Aid Agreement

Purpose: Establish a mechanism allowing EMS agencies/Medical Control Authorities (MCA) to give prehospital care across jurisdictional 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 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 the MCA or EMS agencies within the jurisdiction. It is agreed that mutual aid response is dependent on the availability of equipment and personnel.

4. It is in the best interests of participating MCAs to include each other in disaster in 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 participating MCA distributing the information.

5. Participating MCAs agree to adopt, as a minimum, the State Model 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.

6. It is agreed that signatories may terminate this agreement without cause by providing a 30 day written notice to all other participating MCAs.

EMS Immunization & TB Testing

Purpose:

To allow paramedics to provide agency TB testing and vaccinations for seasonal influenza and during public health emergencies.

Community immunization and other public health applications are important duties that paramedics may perform as determined necessary in cooperation with the medical control authority and the local public health department. Training will be approved by the EMS Medical Director and Medical Control Authority and may be accomplished under the direction of the MCA and/or local public health department.

1. **Indications for immunization and/or TB testing:**
   A. Public or EMS agency personnel may be immunized or tested for TB under guidelines developed by the public health department or MCA.
   B. Age groups for immunization will be determined by the MCA or public health department as appropriate for the immunization clinic setting or agency TB testing requirements as determined necessary by the local public health department or agency infection control guidance.
   C. Timing of immunizations or TB testing will be determined by the MCA, 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 TB 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 TB testing**
   A. Immunizations or TB testing may be administered via IM, SQ or intranasal 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 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 TB testing may only 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. Michigan Care Improvement Registry (MCIR) record keeping may be required for some immunizations such as is required for H1N1.

Suspected Pandemic Influenza

Purpose: To have a standard approach to patients during a period of declared Pandemic Influenza, or state of public health emergency, that enhances awareness and protection of responders and prehospital care to patients and maximizing supplies that may become limited.

Criteria:

1. This protocol will apply to patients encountered by all levels of EMS, during an epidemic/pandemic of influenza. All agencies should frequently check the CDC.gov website for the latest recommendations with Personal Protective Equipment (PPE) and treatment recommendations. These can change frequently in an evolving and ongoing epidemic/pandemic.
2. The center for Disease Control and Prevention (CDC) has declared that an epidemic of influenza A or similar illness 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 vaccinations.
2. Each life support agency shall maintain a supply of fit tested disposable N-95 respirators and eye protection (e.g., goggles, eye shield), disposable non-sterile gloves, and gowns.
3. Each life support agency shall provide hand sanitizer to staff.
4. In areas with confirmed cases of influenza, 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 should 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.

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 for suspected case of influenza 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 for suspected case of influenza.
   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.

Active Assailant Policy

The purpose of this protocol is to provide guidance for the responsibilities for triage, treatment and evacuation of injured individuals following active assailant incidents.
Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
			X			*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*		*X*	

Responsibility

1. Unified Command shall determine, in advance when possible, the structure and design of teams intended to function as a Rescue Taskforce (RTF) for the purposes of providing lifesaving interventions for patients within a warm zone and the extraction of those patients.
2. Ambulance personnel are responsible for the transportation of injured individuals and accountability for those injured individuals.
3. Life Support Agencies must provide the MCA with a copy of their approved Active Assailant SOG along with annual license renewal.

Triage

1. When a RTF is active, triage of encountered patients shall entail evaluation of dead/not dead.
2. Primary treatment is for control of major hemorrhage.
3. When a group of patients are encountered, a rapid walk thorough of the group with the intent of recognizing and management of uncontrolled hemorrhage is indicated.
4. RTF teams, when an isolated not-dead patient is encountered, the patient should be evacuated and that RTF should return and continue search, after transfer of the patient to waiting personnel.
5. When groups of patients are encountered, rapid control of hemorrhage is primary. Secondary is to evaluate for the most severely injured patient and requests for additional support from RTF teams. Evacuation subsequently occurs based upon severity of injury.
6. When the RTF drops off a patient at the casualty collection point or the external treatment personnel, a new supply of tourniquets, pressure dressings, etc. should be ready for the crew as an exchange for the patient.

Treatment

1. The primary goal in the treatment area is to, as quickly as possible, facilitate preparation for patient transport to the hospital. If patients are ready to go, and a resource is available, efforts should be made to cycle them out for transport. If there are delays in having available ambulances for transport, the sending of patients should be tiered based upon the triage category.
2. When possible and prudent, the highest priority patients should be transported first.
3. Treatment management should be aimed at minimal level care unless there is no other care or transport preparation to be done. ALS level care should be minimal, if any.

Equipment

1. All licensed life support vehicles must, at a minimum, carry go bags each containing:
    a. Two hemostatic gauze (min. 3" x 48")
    b. 2 rolled gauze
    c. Two pressure dressings
    d. Chest seal – combo pack or two seals
    e. 2 tourniquets – CAT or SAM XT
    f. 1 adult NPA (32 F) and 1 pediatric NPA (24 F)
    g. 2 SALT Triage cards

2. Premade kits with the listed contents are encouraged but not required

Transportation

1. Patients should be sent by ambulance when possible and prudent.
2. Spontaneous use of other vehicles is permissible under exceptional circumstances per MCL §333.20939
3. If patients are transported by vehicles other than an ambulance, or without medical personnel, efforts should be made to provide critical emergency care prior to departure (hemorrhage control, chest seals, etc.) when prudent and possible.

MUSKEGON COUNTY

Protocols

Protocol Number **Protocol Name**

Critical Care

Table of Contents

Date: March 9, 2016 Section 11.1

Critical Care Program Policy

Purpose
The purpose of this policy is to identify the minimum requirements for agencies and personnel operating at the Critical Care level within this MCA.

1. Program Policy
   A. Critical Care Medical Director is appointed by the MCA Medical Director. See **Critical Care Medical Director Roles/Responsibilities Protocol**.
   B. Critical Care Supervisor
      (1) Each participating service will have a designated Critical Care Supervisor.
      (2) Critical Care trained Paramedic with two years full time Critical Care experience.
      (3) Approval of Critical Care Medical Director.
   C. Critical Care Course Coordinator for approved Critical Care Program.
      (1) Provides initial training.
      (2) Licensed Paramedic Instructor-Coordinator.
      (3) Approved by the Critical Care Medical Director.
   D. Critical Care Paramedic
      (1) Paramedic currently licensed by the State of Michigan.
      (2) Employed by an approved ALS provider agency.
      (3) Successfully completed an MCA approved Critical Care training program.
      (4) Participated in Critical Care continuing education and recertification as required by the MCA.

2. Agency Requirements
   A. Critical Care Supervisor, Critical Care Training, Critical Care equipment and personnel are to be provided for and maintained by the agency.
   B. Provide staffing with minimally one Critical Care Paramedic and one EMT or higher for each Critical Care designated ambulance.
   C. Maintain accurate records of personnel licensure, Critical Care training and clearance status including completion of an MCA approved clinical orientation.
   D. Records must be available to the MCA, MDCH or other appropriate regulatory agencies upon request.
   E. Provide reports as deemed necessary by the MCA and/or Medical Director, provide ePCR access to the Medical Director for all reports.
   F. Ensure regular attendance of Critical Care Paramedics at any scheduled Critical Care meetings and/or in-service trainings.

G. All Critical Care personnel are expected to follow the procedures and protocols as stated in the policy. If the Critical Care Medical Director, MCA Medical Director or Medical Control Board determines that the provider is in violation of the policy, the provider's or agency's Critical Care Program approval may be suspended or revoked.

3. Equipment
   A. See **Critical Care Interfacility Transfer Protocol**.
   B. If medications are used from the Regional Drug Bag System during Critical Care Transport (e.g., for treatment of unanticipated deteriorating patient condition), they are to be replaced as they would during non-Critical Care Transport at the receiving facility, or once back in the agencies primary coverage area at any designated facility participating in the Regional Drug Bag System.

4. Critical Care Initial Training Requirements
   A. Program Faculty
      (1) Critical Care Coordinator
         a. Responsible for supervision of all aspects of the Critical Care program.
         b. Participants in selection, training and certification process for Critical Care Paramedics.
         c. Supervises and assures that education and proficiency requirements are met.
         d. In conjunction with the Critical Care provider agency, provides data to Critical Care Medical Director and MCA as required.
      (2) Critical Care Course Instructor – Responsible for coordination and instruction of the Critical Care Training Program. Is a content expert in their respective area of instruction and approved by the Critical Care Coordinator and/or Medical Director.
   B. Student Qualifications
      (1) Fully licensed paramedic by the State of Michigan and employed by an approved ALS provider agency.
      (2) Two years of experience as a paramedic and approval of the sponsoring agency.
   C. Critical Care Initial Training Course or approved course
      (1) Approved by Critical Care Medical Director.
   D. Critical Care Paramedic Approval
      (1) Successful completion of Critical Care initial training course.
      (2) Successful completion of Critical Care Paramedic test.
      (3) Complete Critical Care clinical experience.
      (4) Approval of the Critical Care Medical Director.

5. Critical Care Continuing Education and Recertification
   A. During the two-year period of the provider's Critical Care certification, they must accrue **MCA approved** continuing education credits. Critical Care Paramedics are required to complete 20 hours of continuing education relevant to critical care transfers, as determined by the MCA, every two years in order to be eligible for re-certification by the MCA.
   B. In addition to 20 hours of relevant continuing education, Critical Care Paramedics must maintain currency of the following certifications (no CC-P CE credit will be awarded for proof of these certifications):
      1) Basic Cardiovascular Life Support (CPR) currency (must meet basic life support standards for a professional provider, as set forth by the American Heart Association)
      2) Advanced Cardiovascular Life Support (ACLS) currency
      3) Pediatric Advanced Life Support (PALS) or Pediatric Education for Prehospital Professional (PEPP) or Emergency Pediatric Care (EPC) currency
      4) International Trauma Life Support (ITLS) or Prehospital Trauma Life Support (PHTLS) currency
   C. In order to maintain clearance as a Critical Care Paramedic, personnel must staff the Critical Care ambulance on a regular basis. If there has been a significant lapse in an individual's Critical Care experience they may be reclassified as a non-Critical Care Paramedic until approved for Critical Care status by the Critical Care Coordinator and Medical Director.
      1) If a provider has lapsed for 6 months to 12 months, they will be required to conduct an agency re-orientation before being allowed to be reclassified as Critical Care Paramedic.
      2) If a provider has lapsed for more than 12 months, they will be required to obtain MCA approval before practicing as a Critical Care Paramedic. Approval will be considered by the Medical Director on a case-by-case basis.

6. Critical Care Reporting
   A. Each Critical Care transport will be clearly documented on the Critical Care ePCR.
   B. ePCR access will be provided for the Critical Care Coordinator and Medical Director for review as requested.

Critical Care – General

1. Complete prior to transport
   A. Obtain a detailed history of patient's present illness prior to initial contact from patient's RN or physician.
   B. If available, obtain the most recent 12 Lead ECG, ABG, labs, vital signs, past medical history, history of present illness, current medications, and allergies.
   C. Obtain any orders from the sending facility along with any signed appropriate or expected orders (i.e., medications/drip rates; mechanical ventilator settings).
   D. Proceed with initial patient contact and perform a physical examination which includes at least the following:
      (1) LOC
      (2) Breathing rate, rhythm, compliance and/or ventilator settings
      (3) Complete vital signs
      (4) Cardiac monitoring
      (5) Oxygen saturation
      (6) IV site status; medication infusions labeled for accuracy; pump settings; adequate amount of medication for transport
   E. Initiate Critical Care equipment interchanges and observe patient for adverse changes.
   F. Ventilator patient will be monitored for continuous CO2 exchange.
      (1) Maintain FI O2 per sending facility orders.
      (2) Refer to specific ventilator protocol for additional information.

2. Complete during transport
   A. Patient assessment and vital signs will be performed at a minimum of 15 – 30 minute intervals, dependent on patient status. In order to trend patient condition, a minimum of two sets of vitals will be performed on all patients. Any abnormality will be addressed immediately per sending physician orders, by direct contact with Medical Control or established ALS protocols.

      Examples include, but not limited to:

      Equipment failure

      - Ventilators: address all warning tones per manufacturer recommendations. If unable to resolve, and patient shows signs of distress, ventilate patient via BVM with 100 percent oxygen.
      - IV pumps: address alarms by checking IV site and following line up to the pump. Follow the manufacturer's recommendations.

   B. Transfer patient care to the receiving facility. Give a verbal report to receiving RN (or physician) along with the completed Critical Care medical record, any applicable paperwork and films from sending facility.

Muskegon County
CRITICAL CARE
CRITICAL CARE CONTINUING EDUCATION REQUIREMENTS

Date: December 18, 2020 Section 11.3

Critical Care Continuing Education Requirements

1. During the two-year period of a Muskegon County provider's Critical Care Paramedic Certification, the provider must accrue **medical control authority approved** continuing education credits. Critical Care Paramedics are required to complete 20 hours of continuing education relevant to critical care transfers, as determined by Medical Control, every two years in order to be eligible for re-certification by the MCA. In addition to 20 hours of relevant continuing education, a copy of CPR, ACLS, ITLS or PHTLS, and EPC or PALS or PEPP cards are required (No CC-P CE credit will be awarded for proof of these certification).

   A CPR card must meet basic life support standards for a professional provider, as set forth by the American Heart Association.

   Acceptable CPR cards are as follows: American Heart Association, American Red Cross, ASHI, and AAOS/ESCI. Additionally, ANY CPR certification that is done completely online WILL NOT be acceptable.

2. Medical Control Authority Approved Continuing Education
   Lesson plans must be submitted to the medical control authority at least 30 days prior to class for preapproval of Critical Care Continuing Education Credits. The standard State CE Lesson Plan format should be used.

   Credits will be based on the following:
   1:1 Classroom
   1:2 Practical
   1:3 Clinical/Quality Assurance/CC-P Meetings

PLEASE RETAIN COPIES OF ALL RECORDS FOR A PERIOD OF ONE YEAR AFTER THE EXPIRATION DATE OF YOUR CERTIFICATION. These documents verifying continuing education may be requested by the MCA for audit purposes.

FAILURE TO PROVIDE SUCH DOCUMENTATION, IF REQUESTED, CREATES A REBUTTABLE PRESUMPTION THAT THE PROVIDER HAS MADE A FALSE AND FRAUDULENT STATEMENT IN APPLYING FOR PRIVLEDGES TO PRACTICE AS A CC-P WITHIN THE WMRMC MCA.

Critical Care Medication Administration

Purpose
The purpose of this protocol is to identify the medications that may be used during interfacility transport by Critical Care Paramedics.

1. Follow **Critical Care – General Protocol**.
2. Orders for treatment, including medications, must be provided in writing by the transferring physician to the Critical Care Provider prior to initiation of transport.
3. Ordered medications will be provided by the transferring facility.
4. Critical Care Providers must be trained in all medications being administered, or other trained staff must accompany the patient during transport.
5. The following is a list of preapproved medication classes that may be administered by Critical Care Paramedics with a written order from a transferring physician:

Electrolytes	Blood/Blood Products	Sympathomimetics
Sympathetic Blockers	Antidysrhythmics	Anticoagulants
Cardiac Glycosides	Anticonvulsants	Fibrinolytics
Alkalinizing Agents	Analgesics	Diuretics
Natriuretic Peptides	Antianginal Agents	Antihypertensives
Beta Agonists	Xanthines	Anticholinergics
Induction Agents	Corticosteroids	Neuromuscular Blockers
Anti-inflammatory Agents	Sedatives	Hormones
Antihyperglycemics	Antihypoglycemics	Carbohydrates
Vitamins	Barbiturates	Tocolytics
Neuroleptics	Narcotics	Benzodiazepines
Calcium Channel Blockers	Antipsychotics	Antiemetics
Antianxiety Agents	Antihistamines	Anesthetic Gas
NSAIDs	Insulin	

Initial Date: 03/23/2020
Revised Date: 08/28/2020 Section: 14-01

Privileging and Participating Facilities Release During COVID-19 Response

Purpose: Establish a mechanism allowing EMS agencies/Medical Control Authorities (MCA) to give prehospital care across jurisdictional boundaries during the COVID-19 response.

1. During the COVID-19 response all MCA, EMS Agencies, and Emergency Departments assist and support each other. This provides an approved/authorized process allowing EMS agencies to function within an MCA during the COVID-19 response.

2. Requests for support may be made to the MCA or EMS agencies within the state through each MCA's local Healthcare Coalition. Response is dependent on the availability of equipment and personnel.

3. For the purpose of load balancing hospitals during the COVID-19 pandemic, personnel and agencies from different MCAs will be allowed to operate in any MCA for the duration of the response.

    a. Personnel should function according to the protocols of their home MCA.
    b. When need diminishes, previously approved privileging protocols will be immediately reinstated.
    c. Agencies operating under this protocol during the COVID-19 response will return to their normal approved response areas when the need for cross-MCA function has lapsed.

MCA Name:
MCA Board Approval Date:
MCA Implementation Date:
Protocol Source/References:

Coronavirus Disease (COVID-19)

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X					*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
	X	*X*	*X*	*X*	*X*	

Purpose: This is an emergency protocol to guide EMS response during the coronavirus disease (COVID-19) pandemic, including patients with suspected or confirmed COVID-19 infection.

CDC Interim Guidelines EMS During Coronavirus Disease (COVID-19) Pandemic:
https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-for-ems.html

PSAP/EMD Focused Caller Screening

1. This protocol is intended to augment, not replace, current approved EMD protocols.
2. The caller should be asked if the patient or anyone in the immediate location is known to be COVID-19 positive or under public health monitoring for COVID-19 infection.
    a. For the purposes of this protocol, anyone with a positive test result within the last 15 days, or under active public health directed quarantine, is considered to be COVID-19 positive.
3. If a call screens for confirmed COVID-19 infection, EMS should be advised to "don airborne precautions" or similar area dispatch approved verbiage.
4. **This does NOT replace the need for EMS Providers to evaluate each response for COVID-19 risk**.

Response

1. When responding to calls, minimal personnel will enter the location utilizing appropriate PPE and assess the patient.
2. After the initial assessment, if more resources are needed, personnel should request the specific necessary resources.
3. In responding to the additional requests, only the necessary personnel needed to provide the requested assistance will enter the location utilizing appropriate PPE.

4. Priority 1 and 2 responses that screen for COVID-19 infection:
    a. Normal agency response
    b. First unit on scene:
        i. Initial responder(s) enter at minimum level of personnel (if non-transporting and transporting units arrive at the same time, transporting personnel enter scene wearing appropriate PPE, while non-transporting personnel provide support as needed).
        ii. After initial assessment, personnel who have made patient contact request additional (specific) resources, as indicated.
5. Priority three responses that screen for COVID-19 infection:
    a. Initial response by transporting agency ONLY, unless transporting agency delayed by more than 30 minutes.
    b. Transporting personnel make contact wearing appropriate PPE.
    c. After initial assessment, if more resources are needed, personnel request specific necessary resources (e.g., lift assist).
6. Responses to health facilities (including Long Term Care facilities) with a patient who screens positive for COVID-19 infection:
    a. If a Life Support Agency (LSA) would respond to health facilities (including Long Term Care facilities) for priority 1 and 2 calls during normal operations, they will continue to respond to such calls.
    b. Responses to priority 3 or interfacility transfer calls will have only transport agencies respond utilizing appropriate PPE.

Personal Protective Equipment (PPE)

The medical control authority expects EMS agencies and personnel to operate with a **Culture of Safety**. This includes ensuring that every responder, and every responder they are in contact with, are wearing the correct level of PPE per current MCA protocol.

1. **ALL CALLS:** EMS providers minimally shall wear a surgical mask or N95, eye protection, and gloves while on scene or when entering a healthcare facility.
    a. An N95 or higher-level respirator shall be worn in place of a surgical mask when providing direct patient care or within the immediate vicinity of **<u>any</u>** patient.
    b. Isolation gown or equivalent shall be worn during patient care activities for suspected or confirmed COVID-19 patients and/or when aerosolizing-generating procedures are performed.
    c. Standard prescription glasses do not qualify as approved eye protection, refer to current CDC guidelines.

2. Agencies must develop and implement PPE reuse policies for critical items, if those items are or are anticipated to become in shortage. Refer to CDC for guidance on optimizing PPE: https://www.cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/index.html

Licensed life support agencies privileged within the MCA must establish a policy for the utilization of personal protective equipment by their staff, while on duty, in compliance with executive orders, CDC guidance, and adopted protocols.

Patient Interaction & Assessment

1. Initial assessment should begin from a distance of at least 6 feet from the patient, if possible.
2. The number of responders within 6 feet of the patient should be limited to the fewest number necessary to provide essential patient care.
3. Patient contact should be minimized to the extent possible.
4. Responders should consider the signs, symptoms, and risk factors of COVID-19 when assessing the patient and use this information to adjust PPE levels in accordance with required PPE identified in the Personal Protective Equipment (PPE) section of this porotcol.
    a. Fever or chills
    b. Cough
    c. Shortness of breath
    d. Fatigue
    e. Muscle or body aches
    f. Headache
    g. New loss of taste or smell
    h. Sore throat
    i. Congestion or runny nose
    j. Nausea or vomiting
    k. Diarrhea
5. A (surgical type) facemask should be placed on the patient as soon as possible for source control, if tolerated. Do **NOT** place N95 or similar masks on patients as these increase work of breathing.
6. Patients transported to hospitals must have a surgical or cloth mask applied before entry into the hospital regardless of the cause of the illness or injury, unless not possible due to airway supporting care.

Treatment
Refer to the ***Clinical Treatment for Patient with Suspected or Confirmed COVID-19*** *Protocol*

Precautions for Aerosol-Generating Procedures
1. In addition to PPE, there should be increased caution in aerosol-generating procedures (BVM, suctioning, emergency airways, nebulizers, CPAP, etc.)
2. N95 masks, instead of surgical mask, shall be worn by responders for aerosol-generating procedures.
3. Keep patient and aerosolization away from others without PPE (e.g., bystanders, EMS personnel not in PPE, etc.).
4. The use of HEPA filters for all procedures are considered best practice when available.
5. When treating patients in the ambulance, activate patient compartment exhaust fan at maximum level.
6. Isolate cab from treatment area when possible.
7. Providing an aerosolizing procedure in a closed ambulance should be avoided, when possible.

Hospital Arrival with Aerosol- Generating Procedures
1. If an aerosol-generating procedure is initiated prior to hospital arrival, recontact must be made with the ED by radio/phone upon arrival and before entering the facility:
    a. Obtain a room assignment.
    b. Ensure that ED staff is prepared for the patient.
    c. Temporarily discontinue nebulizers while entering the facility and until the treatment can be reestablished once in an appropriate room.
    d. Medical control may direct that CPAP should be temporarily transitioned to a non-rebreather; a BVM should be brought with in case needed.

Transport
1. When coronavirus disease is suspected in a patient needing transport, the receiving facility should be notified in advance that they may be receiving a patient who may have coronavirus disease.
    a. Notification should occur as soon as practical.
    b. Patients with positive COVID-19 screen or symptoms should have “COVID-19 positive Screen” complaint, and then a description of the injury or illness in the notes.

c. Patients who have been tested and diagnosed with COVID-19 shall have the chief complaint of "COVID-19 Positive Tested" chosen in EMTrack, and a description of the injury or illness in the notes.
d. Patients having a positive COVID-19 screen, test, or symptoms require a verbal report via recorded phone or radio regardless of priority.

2. Family members or other contacts of patients with suspected coronavirus disease should **not** ride in the transport vehicle, if possible.
3. Only necessary personnel should be in the patient compartment with the patient.
4. When practical, utilize a vehicle with an isolated driver and patient compartment. Maintain ventilation to the patient compartment.
5. Personnel driving the transport vehicle should doff PPE (with exception of surgical mask / respirator) and perform hand hygiene before entering the driver's compartment. Surgical mask/Respirator should be maintained throughout care, transport, and turnover.
6. Doff PPE after providing verbal turnover report and leaving patient room and perform hand hygiene before touching documentation tools.

Destination

1. Patients with suspected COVID-19 infection should be transported in accordance with destination protocols and guidance documents.
2. When directed by local medical control authority, patients with suspected or confirmed COVID-19 infection may be transported to alternative destinations, such as an Alternative Care Site (ACS), urgent care/med-center, quarantine facility, private residence, etc.
3. When directed by the Medical Control Authority, patients not screening for COVID-19 infection may be transported to alternative destinations.
4. When directed by the Medical Control Authority, patients may be screened for transport or in-home care via telephone or telemedicine consult with on-line medical control.
5. When directed by the Medical Control Authority, patients may be transported by alternative vehicles other than licensed life support vehicles.

Documentation

1. Documentation of patient care should be done AFTER transport has been completed, PPE has been removed, and hand hygiene has been completed.
2. Documentation should include a listing of all EMS personnel involved in the response.
3. The narrative of the patient care report shall include the key terms COVID-19 or coronavirus in order to allow for syndromic surveillance.

Cleaning Transport Vehicle and Equipment

1. Leave patient compartment open for ventilation while patient is taken into receiving facility.
2. Maintain doors open during cleaning.
3. Follow current CDC guidelines for cleaning and disinfecting transport vehicle. An EPA-registered, hospital-grade disinfectant should be used on all surfaces.
4. Clean drug bag cassette and contents prior to exchanging at receiving facility.
5. Driver's compartment should be included in the cleaning process.

Notification of COVID-19 positive testing

The Ryan White HIV/AIDS Treatment Extension Act of 2009 addresses notification procedures and requirements for medical facilities and state public health officers and their designated officers regarding exposure of emergency response employees (EREs), which includes EMS and other first responders, to potentially life-threatening infectious diseases. In March 2020, CDC/NIOSH updated the list of potentially life-threatening infectious diseases to which EREs might be exposed that are covered by the Act to include the addition of COVID-19, the disease caused by the virus SARS-CoV-2.

1. If a hospital receives a request to confirm a suspected COVID-19 case from the medical control authority or an EMS agency related to a patient transported to their facility, the hospital shall respond to such request to facilitate detemination about whether the responders involved have been exposed to COVID-19.

Staff Fitness for Work Screening

1. Life Support Agencies must institute a staff screening policy in collaboration with their local MCA.
2. A provider with a fever of ≥ 100.4° F / 38° C shall not work until resolution of symptoms.
3. Agencies may adopt a stricter screening policy.
4. Agencies must notify the MCA of employee exposure or quarantine.
5. Long term care facilities and hospitals may require screening prior to EMS entry into facilities. Staff should be prepared and willing to allow for assessment of temperature and screening questions, when required.

Return to Work Criteria

1. Return to work of an exposed or confirmed COVID-19 positive provider shall occur according to P.A. 238 of 2020 and current CDC *Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance)*
2. In the event of sustained widespread community transmission as determined by the individual County's Health Department, agencies may utilize the adjusted Return to Work Guidance published by the Michigan Department Health and Human Services.

Extension of Required MCA Certifications

1. Due to the limited access of recertification courses due to COVID-19 all MCA required certification course renewals are extended until six months past the end of the emergency declaration.
    a. This includes ACLS, PALS, PHTLS, ITLS, PEPP, EPC
2. All EMS providers must have updated certifications by June 30, 2021.
3. New providers who enter into the Regional 6 EMS system must have the required certifications prior to completing their agency orientation program.

Additional Resources

CDC COVID-19 Website
https://www.cdc.gov/coronavirus/2019-ncov/index.html
Michigan EMS COVID-19
https://www.michigan.gov/mdhhs/0,5885,7-339-73970_5093_28508_76849-520225--,00.html
Michigan.gov Coronavirus
https://www.michigan.gov/coronavirus
IAFF.org Coronavirus
https://www.iaff.org/coronavirus/
Johns Hopkins University Coronavirus Syndromic Surveillance Tool

Clinical Treatment for Patient with Suspected or Confirmed COVID-19

I. Applicable patients:
Patients prescreened or encountered by EMS personnel who may or may not have been pre-identified by 911/EMD as a potential COVID-19 patient:
- A. Have signs and symptoms of respiratory illness (cough, shortness of breath)
- B. Have signs and symptoms of respiratory illness (cough, shortness of breath) AND known exposure to patient with suspected COVID-19
- C. Have other signs or symptoms associated with COVID-19 (fever, chills, shaking with chills, sore throat, loss of sense of taste/smell, muscle pain, headache, profound fatigue).

II. Personal Protective Equipment:
- A. Standard, contact, and airborne precautions
- B. Surgical masks for personnel may be substituted for N95 masks when no aerosolized procedures are taking place and when not in an enclosed area (e.g. ambulance patient compartment) with actively coughing patient.
- C. Surgical masks or non-rebreather masks with supplemental oxygen for patients in respiratory distress should be applied to the patient whenever possible to perform source control. All patients regardless of COVID-19 suspicion should have surgical mask applied for source control.

III. Treatment:
- A. Follow **General Prehospital Care Protocol and other applicable protocols modified as below**
- B. Patients should receive oxygen to maintain SPO2 ≥94%
  - i. Nasal cannula should be applied under a surgical mask.
  - ii. Non-rebreather masks, for patients with hypoxia or respiratory distress should be used in lieu of surgical masks.
  - iii. Combined nasal cannula at 6 LPM and non-rebreather mask at 12-15 LPM may be considered in patients remaining hypoxic after non-rebreather alone.
- C. Assess breath sounds
  - i. For patients with clear breath sounds, continue supportive oxygenation.
  - ii. For patients with wheezing
    1. Preferred mechanism for pharmacological intervention is albuterol by metered dose inhaler (MDI) with spacer (including assisting patient with personal inhaler of albuterol), if available.
       - a. Administer 4 puffs over 30-60 seconds (equivalent to 2.5 mg of albuterol)
       - b. Dose may be repeated as needed every 5 minutes.
    2. If patient has wheezing with moderate to severe dyspnea and there is not access to MDI and the patient has a known history of asthma/COPD
       - a. Administer bronchodilator via nebulizer in open area with maximum air ventilation, with N95 or greater respirator applied to personnel, and single rescuer monitoring patient from maximal distance possible. Contact medical control for direction, as needed.

Protocol Source/References: https://www.cdc.gov/infectioncontrol/guidelines/isolation/precautions.html

b. **DO NOT** administer nebulized medication in closed ambulance.
c. For patients with known history of asthma/COPD and in moderate to severe dyspnea WITH wheezing, may administer: epinephrine (1 mg per mL) 0.3 mL IM.

MCA Selection for Epinephrine Administration
☐ MFR ☐ EMT

iii. For patients with severe respiratory distress AND a history of CHF or COPD and positioning, oxygenation, and other treatments (e.g. nitroglycerin 0.4 mg SL q 3 minutes for CHF) are not effective:
1. Apply CPAP per protocol.
2. Use HEPA filter for exhalation port, if available.
3. CPAP being utilized in the patient compartment should be limited to necessity and only when all providers in the patient compartment have N95 respirators in place.
4. Contact receiving hospital as early as possible to advise them of patient requiring CPAP to allow for appropriate transition of care upon arrival.

D. Hypotensive patients – those with SBP <90mmHg with signs and symptoms of shock
i. Administer normal saline 250 mL bolus.
ii. Reassess BP and signs and symptoms of shock prior to administering more fluid
iii. Normal saline boluses of 250 mL may be repeated to a maximum of one liter as signs/symptoms persist before contacting medical control.

E. Airway management
i. **DO NOT** Intubate or perform (mouth to mask/mouth) rescue breathing on patients with suspected COVID-19.
ii. Utilize supraglottic airways with ETCO2 if an advanced airway needs to be placed.
iii. Place filter inline for ventilations or utilize a BVM with filtration capability, if available.

IV. Time sensitive patients:
A. Patients in need of immediate intervention will be treated with a minimum of gloves, eye protection, and mask

V. Transport:
A. Interventions should be performed **PRIOR** to loading into or closing patient compartment of the ambulance.
B. Only one provider will remain with patient for transport, if possible.
C. Follow COVID-19 Destination and Transport Protocol

VI. Cardiac arrest- Follow CARDIAC ARREST IN A PATIENT WITH SUSPECTED COVID-19

Protocol Source/References: https://www.cdc.gov/infectioncontrol/guidelines/isolation/precautions.html

Nasopharyngeal Specimen Collection for COVID-19

I. Applicable patients: Patients who have received a referral or order from a clinician (primary care, local health department, medical control physician) for specimen collection.

II. Collection Procedure for Nasal Pharyngeal Sampling:
- A. Don appropriate PPE
  - i. N95 Mask
  - ii. Gown
  - iii. Gloves
  - iv. Eye protection
- B. Place patient in seated position
- C. Tilt patient's head back slightly to visualize nasal passages
- D. Ask patient to remove face mask and close eyes
- **E. Gently insert swab along nasal septum, just above the floor of the nasal passage, to the nasopharynx**
  - i. Stop when resistance is met
  - ii. Do not force swab further
  - iii. If you detect resistance to the passage of the swab, back off and try reinserting it at a different angle, closer to the floor of the nasal canal.
  - iv. The swab should reach a depth equal to the distance from the nostrils to the outer opening of the ear.
- F. Rotate swab several times (keep in passage 10 seconds)
- G. Gently remove swab while rotating
- H. Place swab into collection tube according to directions
  - i. Place swab into tube before breaking stick
  - ii. Tighten cap securely
- I. Have patient reapply face mask

III. Packaging procedure:
- A. Label tube
  - i. Patient name
  - ii. Patient DOB
  - iii. Source
- B. Place tube in plastic bag with absorbent material
- C. Place sample in 95kPa bag
- D. Place bagged sample on ice pack
- E. Follow instructions according to referral source or ordering physician for shipping or delivery.

IV. Key Information:
- A. Uncomfortable procedure, be gentle with patient
- B. Questions or issues with packaging should be handled by referral source, according to directions on collection materials provided

Additional Information and Video: https://www.nejm.org/doi/full/10.1056/NEJMvcm2010260

Cardiac Arrest in a Patient with Suspected or Confirmed COVID-19

I. Applicable patients are patients in cardiac arrest with known previous symptoms or known diagnosis of COVID-19 (coronavirus disease). Concerning pre-arrest symptoms include:
   A. respiratory illness (cough, shortness of breath, sore throat)
   B. fever (all patients with fever prior to arrest should be suspected as having COVID-19)
   C. loss of sense of taste/smell
   D. muscle pain (myalgias)
   E. headaches
   F. chills with or without repeated shaking 9rigors)

II. Personal Protective Equipment:
   A. Standard, contact, and airborne precautions
   B. CPR and assisting ventilations are aerosolized procedures. N95 masks or equivalent are required. Do not perform CPR without respiratory precautions in place.

III. Treatment:
   A. For patients with NO pre-arrest symptoms as noted above and not known to be COVID-19 positive, follow **General Cardiac Arrest Protocol.**
   B. For arrests of patients with known pre-arrest symptoms noted above or known COVID-19 infection treat according to **General Cardiac Arrest Protocol** EXCEPT:
      i. Airway interventions will be limited to BLS procedures, including supraglottic airway. DO NOT INTUBATE.
      ii. When CPR is being performed, only necessary personnel should be next to the patient. Personnel should remain at least 6 feet from patient when not performing interventions, as able.
      
      iii. If no return of spontaneous circulation (ROSC) within 10 minutes of resuscitation, contact medical control for possible termination orders.
      iv. Patients in continuous cardiac arrest **WILL NOT BE TRANSPORTED**, regardless of mechanical CPR device. Resuscitation will either be terminated on scene or ROSC sustained (continued palpable pulse and systolic BP ≥60 mmHg for >5 minutes) **BEFORE** moving the patient to the patient compartment of a vehicle.
   C. For witnessed arrests inside the patient care compartment of known or suspected COVID-19 patients:
      i. Pull vehicle to the side of the road and perform resuscitation in full PPE, with doors **OPEN**.
      ii. If patient has mechanical CPR device in place and has lost ROSC, the device may be resumed with continued transport to the hospital, as long as all personnel in the patient compartment have sufficient respiratory PPE in place.

Protocol Source/References: https://www.cdc.gov/infectioncontrol/guidelines/isolation/precautions.html

Metered Dose Inhaler - COVID-19 Protocol

Adopting MCAs will have an "X" under their MCA name. If no "X" is present, the MCA has not approved or adopted the protocol.

Allegan	Barry	Clare	Ionia	Isabella	Kent	Mason
X	*X*		*X*	*X*	*X*	*X*
Montcalm	**Muskegon**	**N. Central**	**Newaygo**	**Oceana**	**Ottawa**	
X	*X*	*X*	*X*	*X*	*X*	

Purpose: To reduce the utilization of nebulized medication administrations by EMS personnel in COVID suspect or confirmed patients

A. **Metered Dose Inhaler use**:
   1. COVID suspect or confirmed patients with respiratory symptoms, where the protocol recommended treatment is the use of nebulized medications, may alternately receive four (4) puffs of their own rescue Albuterol metered dose inhaler (MDI), with spacer, in place of each nebulized treatment.
   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.

B. Directions for use

Figure 1

Using an MDI with a spacer (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 airways of the lung.
8. Repeat the above steps for each puff.
9. Replace the cap on your MDI when finished.