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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.

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.
Position patient in a position of comfort if pain is not traumatic in nature.

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

Do NOT allow patient to take anything by mouth.

If trauma related, refer to Adult Trauma Protocol

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.

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

☐ 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

MCA Name: Click here to enter text.
MCA Board Approval Date: Click here to enter text.
MCA Implementation Date: Click here to enter text.
Protocol Source/References:
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
  - Position Patient
    - 3rd Trimester? Left Lateral Recumbent
    - All others - Supine

- No
  - Still Altered?
    - Yes
      - Refer to Altered Mental Status Protocol
    - No
      - Refer to General Trauma Protocol

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

If anaphylactic shock, refer to Anaphylaxis/Allergic Reaction Protocol

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

MCA Adoption of Tranexamic Acid Protocol?
- [ ] Yes
- [ ] No

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

Administer Diphenhydramine
- Adults 50 mg IM or IV/IO
- Pediatrics 1 mg/kg IM/IV/IO (max dose 50 mg)

No

Administer Albuterol, refer to Nebulized Bronchodilators Procedure

Symptomatic after treatment?

Yes

Additional epinephrine auto-injector
Additional epinephrine

No

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
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.
Michigan
ADULT TREATMENT
BEHAVIORAL HEALTH EMERGENCIES

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.
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

- Assist Ventilations, as needed

If patient becomes pulseless, begin CPR and refer to Cardiac Arrest – General Protocol (Adult or Pediatric)

- Monitor Vital Signs

- Establish Vascular Access

- Treat Hypotension with fluid bolus consistent with Shock Protocol

  - 12 Lead ECG
  - Target ETCO2 of 35-45 mmHg
  - Consider transport to PCI facility, per local protocol

If Hypotension Persists, Administer Epinephrine Push Dose

- Prepare by adding 1 ml of 1 mg/10ml Epinephrine in 9 ml NS
- Adults administer 1-2 ml every 3 to 5 minutes (titrate to BP)
- Pediatrics administer 0.1 ml/kg, max dose 1 ml, repeat every 3 to 5 minutes

If patient is agitated with airway in place, refer Patient Sedation Protocol