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**.

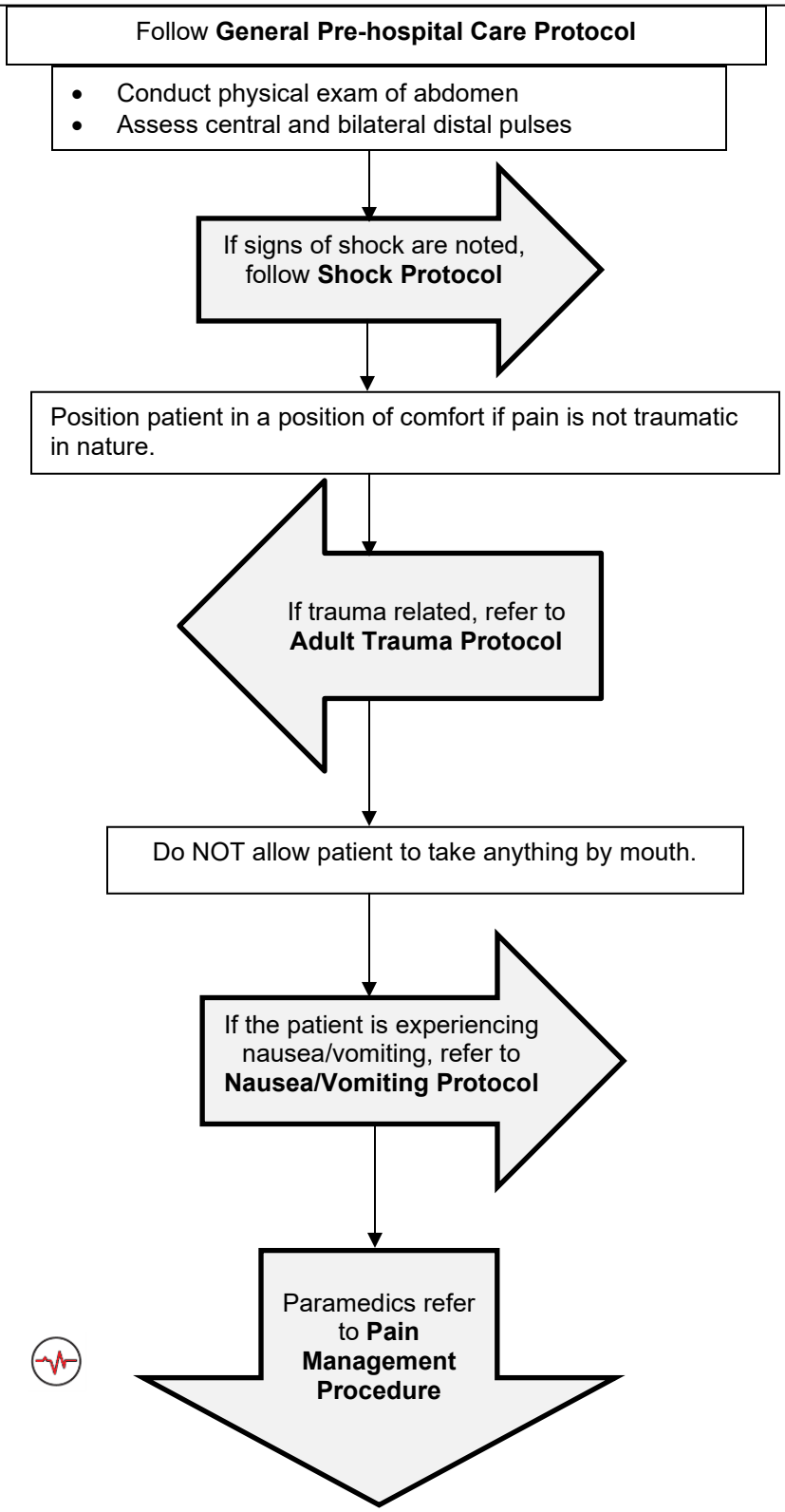

10. Establish vascular access per **Vascular Access & IV Fluid Therapy Procedure** when fluid or medication administration may be necessary.


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.
   b. Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 
   c. For continued nausea or vomiting, Ondansetron may be repeated up to a total maximum dose of 8 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 (max 4 mg)** for pediatrics

For continued nausea or vomiting, **Ondansetron** may be repeated up to a total maximum dose of **8 mg.**

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, refer to **Hemorrhagic Shock Protocol.**

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 (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 SBP greater than 90 mm/Hg.
    c. Pediatric
        i. Administer 1 mcg/kg (0.1 mL Epinephrine 10 mcg/mL)
        ii. Maximum dose 10 mcg (1 mL)
        iii. 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**

If possible hemorrhagic shock, refer to **Hemorrhagic Shock 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 (0.01 mg/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/IO/IM or
Pediatric 2 mg/kg IV/IO/IM (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.

Anaphylaxis/Allergic Reaction
For use in MCA with Draw Up Epinephrine Approval

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

2. Determine substance or source of exposure, remove patient from source if known and able.

3. Assist patient administration of their epinephrine auto-injector, if available.

4. In cases of severe allergic reaction, wheezing or hypotension, administer Epinephrine (1mg/mL) 0.3 mg (0.3 ml) IM.

   control prior to epinephrine, if possible.
   b. If child weighs between 10-30 kg (approx. 60 lbs.); administer pediatric epinephrine dose (1mg/1mL) 0.15 mg (0. 15 ml) IM.
   c. For adults and children weighing greater than 30 kg; administer epinephrine dose (1mg/mL) 0.3 mg (0.3 ml) IM
   d. May repeat at 3-5 minute intervals if the patient remains hypotensive, if available.
5. Albuterol may be indicated. Refer to **Nebulized Bronchodilators Procedure**.

6. Administer a Normal Saline IV/IO fluid bolus in the presence of hypotension

   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. In cases of profound anaphylactic shock (near cardiac arrest), severe respiratory distress, and/or angioedema, administer Epinephrine.
   a. Adult (1mg/1mL) 0.3 mg (0.3mL) IM may repeated 1 time in 3-5 minutes if patient is still hypotensive.

   control prior to epinephrine, if possible.
   c. If child weighs between 10-30 kg (approx. 60 lbs.); administer pediatric epinephrine dose (1mg/1mL) 0.15 mg (0.15 ml) IM**.**
   d. If child weighs 30 kg or greater; administer Epinephrine (1mg/1mL) 0.3 mg (0.3 mL) IM
   e. May repeat 1 time in 3-5 minutes if patient is still hypotensive.

8. 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.)
9. Albuterol may be indicated. Refer to **Nebulized Bronchodilators Procedure**.
10. Per MCA selection, administer Prednisone OR Methylprednisolone.

Medication Options:

☐ **Prednisone 50 mg tablet PO**

☐ **Methylprednisolone 125 mg IV**

Pediatric 2 mg/kg IV (max 125 mg)

11. If patient is symptomatic after treatment without hypotension.
    a. Additional Epinephrine (1 mg/mL) 0.3 mg (0.3 ml) IM (all levels)
    b. Additional Epinephrine (0.1 mg/mL) 0.3 mg (3 ml) slow IV/IO if critically ill (near cardiac arrest).

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