



	General Treatment Protocols	Release for Public Comment	Due
1.1	General Pre-Hospital Care	6/28/2022	8/29/2022
1.2	Abdominal Pain (Non-Traumatic)	6/28/2022	8/29/2022
1.3	Nausea & Vomiting	6/28/2022	8/29/2022
1.4	Syncope	6/28/2022	8/29/2022
1.5	Shock	6/28/2022	8/29/2022
1.6A	Anaphylaxis/Allergic Reaction 1.6 A	TBD	
1.6B	Anaphylaxis/Allergic Reaction 1.6 B (Epi draw up)	TBD	
1.7	Adrenal Crisis	6/28/2022	8/29/2022
1.8	Behavioral Emergencies	TBD	
1.9	Return of Spontaneous Circulation (ROSC)	6/28/2022	8/29/2022
1.10	Opioid Overdose Treatment and Prevention NEW	TBD	

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. Patient care should be initiated at the patient's side prior to patient movement or transport for most medical conditions.
 3. If applicable, refer to Crashing Patient/Impending Arrest protocol.
 4. Complete primary survey.
 5. When indicated, implement airway intervention as per the **Emergency Airway Procedure**.
 6. When indicated, administer oxygen and assist ventilations as per the **Oxygen Administration Procedure**.
 6. Assess and treat other life-threatening conditions per appropriate protocol.
 7. Obtain vital signs including pulse oximetry if available or required, approximately every 15 minutes, or more frequently as necessary to monitor the patient's condition (A minimum of 2 sets are required for all patient transports. Two sets are suggested for patient refusals and treat and release patients.
 8. Perform a secondary survey consistent with patient condition.
 9. Follow specific protocol for patient condition.
 11. Document patient care according to the **Patient Care Record Protocol**.
-  Establish vascular access per **Vascular Access & IV Fluid Therapy Procedure** when fluid or medication administration may be necessary.
-  13. 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.
14. Use capnography as directed per protocol according to **Waveform Capnography Procedure**.

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

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. Patient care should be initiated at the patient's side prior to patient movement or transport for most medical conditions.
- 4-3. If applicable, refer to Crashing Patient/Impending Arrest protocol.
- 2-4. Complete primary survey.
- 3-5. When indicated, implement airway intervention as per the **Emergency Airway Procedure.**
- 4-6. When indicated, administer oxygen and assist ventilations as per the **Oxygen Administration Procedure.**
- 5-6. Assess and treat other life-threatening conditions per appropriate protocol.
- 6-7. Obtain vital signs including pulse oximetry if available or required, approximately every 15 minutes, or more frequently as necessary to monitor the patient's condition (A minimum of 2 sets are required for all patient transports. Two sets are suggested for patient refusals and treat and release patients. suggested.)
- 7-8. Perform a secondary survey consistent with patient condition.
- 8-9. Follow specific protocol for patient condition.
- 9-11. Document patient care according to the **Patient Care Record Protocol.**
- S-12. Establish vascular access per **Vascular Access & IV Fluid Therapy Procedure** when fluid or medication administration may be necessary.
- ECG-13. 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.
- 12-14. Use Consider use of capnography as directed per protocol, according to 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**.



DRAFT

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**.

NOTE: ALGORITHM REMOVED

Nausea & Vomiting

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



2. For patients ≥ 40 kg that are not actively vomiting, administer Ondansetron (Zofran) 4mg ODT, per MCA selection.
 - a. **Contraindications:** Patients with Phenylketonuria (PKU)





ODT Ondansetron included?

YES NO

MCA Selection for Scope


EMT-Basic (ODT) EMT-Specialist (ODT)
 EMT-Specialist (ODT/IV)



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 or if patient vomited post ODT administration).
 - 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 or if patient vomited post ODT administration).
 - b. Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 
 - c. Maximum total administration 8 mg.

Nausea & Vomiting

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








-  2. For patients ≥ 40 kg that are not actively vomiting, administer Ondansetron (Zofran) 4mg ODT, per MCA selection.^[BN(1)]
 - a. **Contraindications:** Patients with Phenylketonuria (PKU)

ODT Ondansetron included?






YES NO

MCA Selection for Scope




EMT-Basic (ODT) EMT-Specialist (ODT)
 EMT-Specialist (ODT/IV)

-   3. For signs ^[BN(2)] 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 or if patient ^[BN(3)] vomited post ODT administration).
 - b. Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 
6. Repeat Ondansetron (Zofran) **NOTE: REMOVED ICON FOR MEDICAL CONTROL**
 - a. Adults 4mg IV/IM (if ODT not already administered or if patient vomited post ODT administration).
 - b.** Pediatrics 0.1 mg/kg IV/IM, max dose of 4 mg 
 - b.c.** **Maximum dose total administration 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.

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.

NOTE: ALGORITHM REMOVED.

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/IM
 -  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

*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.

-  5. Transport
6. Notify Medical Control of patient's medical history.
7. Refer to **Altered Mental Status 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/IM
 -  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.



6-5. Transport

7-6. Notify Medical Control of patient's medical history.

8-7. Refer to **Altered Mental Status Protocol**.

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. After ROSC, patients should be stabilized on scene prior to transport, ideally for at least five minutes before moving the patient. Refer to Crashing Patient/Impending Arrest Protocol.

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. Monitor ETCO₂. If ventilation assistance is required, target ETCO₂ of 35-45 mm Hg.^[BN(1)]
9. Consider Transport to a facility capable of Percutaneous Coronary Intervention (PCI) per MCA protocol if 12 Lead ECG indicates ST Elevation MI.^[BN(2)]
10. If hypotension persists after IV/IO fluid bolus, administer Epinephrine by push dose (dilute boluses).

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



Pediatrics

- iv. Administer 1 mcg/kg (0.1 mL/kg Epinephrine 10 mcg/mL)
 - v. Maximum dose 10 mcg (1 mL)
 - vi. Repeat every 3-5 minutes
2. Anticipate airway intolerance and prepare for patient sedation. If patient becomes 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 $\geq 92\%$ but $< 98\%$.^[BN(3)] Titrate ETCO₂ between 35-45 mmHg.^[BN(4)]
2. Consider removal of airway device only if wide awake, following commands, and unable to tolerate airway device.^[BN(5)]

Return of Spontaneous Circulation (ROSC)^[BN(1)]

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. After ROSC, patients should be stabilized on scene prior to transport, ideally for at least five minutes before moving the patient. Refer to Crashing Patient/Impending Arrest Protocol.

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). Check blood glucose (MFR, if MCA approved)^[BN(2)]
~~4.~~

5. Start an IV/IO NS KVO.
6. Treat hypotension (SBP less than 90^[BE(C3)] 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. Monitor ETCO2. If ventilation assistance is required, target ETCO2 of 35-~~40-45~~ mm Hg.^[BN(4)]
9. Consider Transport to a facility capable of Percutaneous Coronary Intervention (PCI) per MCA protocol if 12 Lead ECG indicates ST Elevation MI.^[BN(5)]
10. If hypotension persists after IV/IO fluid bolus, administer Epinephrine by push dose (dilute boluses).

10. a. Prepare (10 mcg/mL) by adding 1mL of 1mg/10mL Epinephrine in 9mL NS, then ~~a.~~

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



Pediatrics

- ~~i-iv.~~ Administer 1 mcg/kg (0.1 mL/kg Epinephrine 10 mcg/mL)
- ~~ii-v.~~ Maximum dose 10 mcg (1 mL)
- ~~iii-vi.~~ Repeat every 3-5 minutes

2. Anticipate^[BE(C6)] airway intolerance and prepare for patient sedation. If patient becomes 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~~92~~% but <100~~98~~%.
^[BN(7)]Titrate ETCO2 between 34~~35~~-45 mmHg.^[BN(8)]



Michigan
GENERAL TREATMENT PROTOCOLS
RETURN OF SPONTANEOUS CIRCULATION (ROSC)

Initial Date: 5/31/2012

Revised Date: 10/25/2017

2022 REVISED-PUBLIC COMMENT READY

Section 1-9

2. Consider ~~extubation~~ removal of airway device only if wide awake, following commands, and unable to tolerate ~~endotracheal~~ airway device ~~tube~~. [BN(9)]

NOTE: ALGORITHM REMOVED.

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: