



## MICHIGAN State Protocols

### General Treatment Protocols



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## **General Pre-Hospital Care**

Patient care should be initiated at the patient's side prior to patient movement or transport for most medical conditions. 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)***

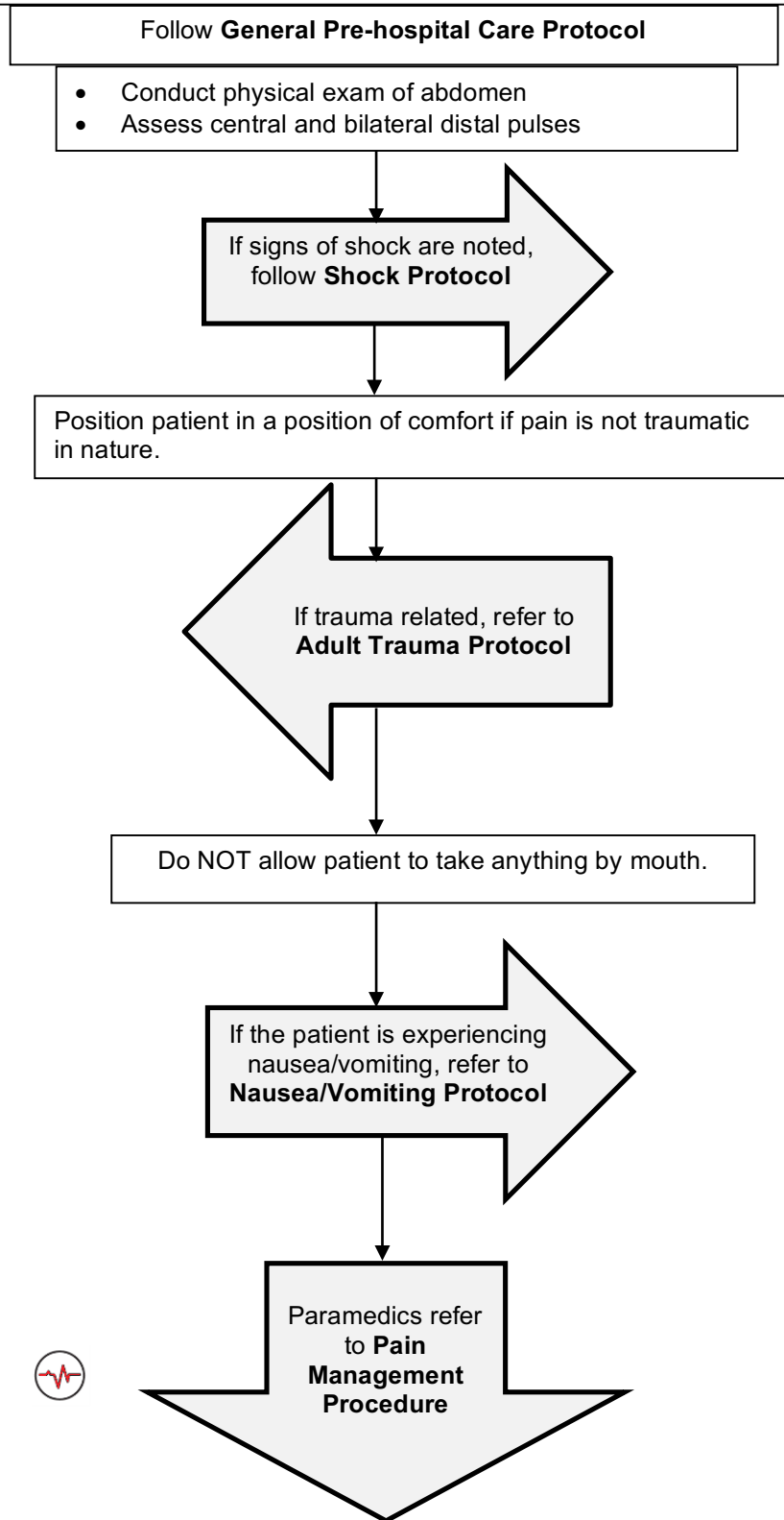
1. Follow **General Pre-hospital Care Protocol**.
2. Conduct physical exam of abdomen including assessment of central and bilateral distal pulses.
3. If symptoms of shock present refer to **Shock Protocol**.
4. Position patient in a position of comfort if pain is non-traumatic. If trauma related, refer 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**.



*Michigan*  
**GENERAL TREATMENT**  
**ABDOMINAL PAIN (NON-TRAUMATIC)**


Initial Date: 05/31/2012  
Revised Date: 10/25/2017

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## Nausea & Vomiting








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

-  2. For patients  $\geq 40$  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

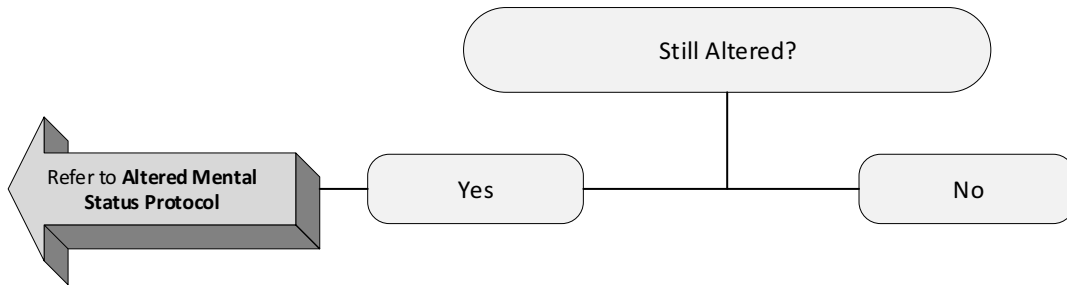
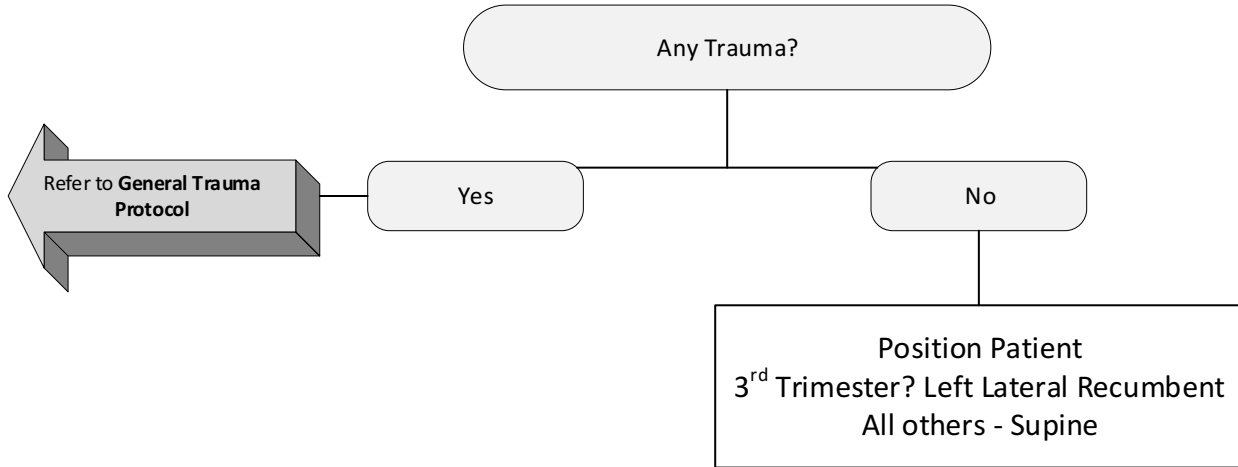
-  3. For signs of dehydration, administer NS IV/IO fluid bolus up to 1 liter, wide open.
  - a. Pediatrics receive 20 ml/kg 
4. Hypotensive patients should receive additional IV/IO fluid boluses, as indicated by hemodynamic state. Continue IV/IO fluid bolus to a maximum of 2 liters.
  - a. Pediatrics 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 

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## **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**



**S** For Signs of Hypotension, administer NS IV fluid bolus

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



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

**S** 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 3<sup>rd</sup> 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

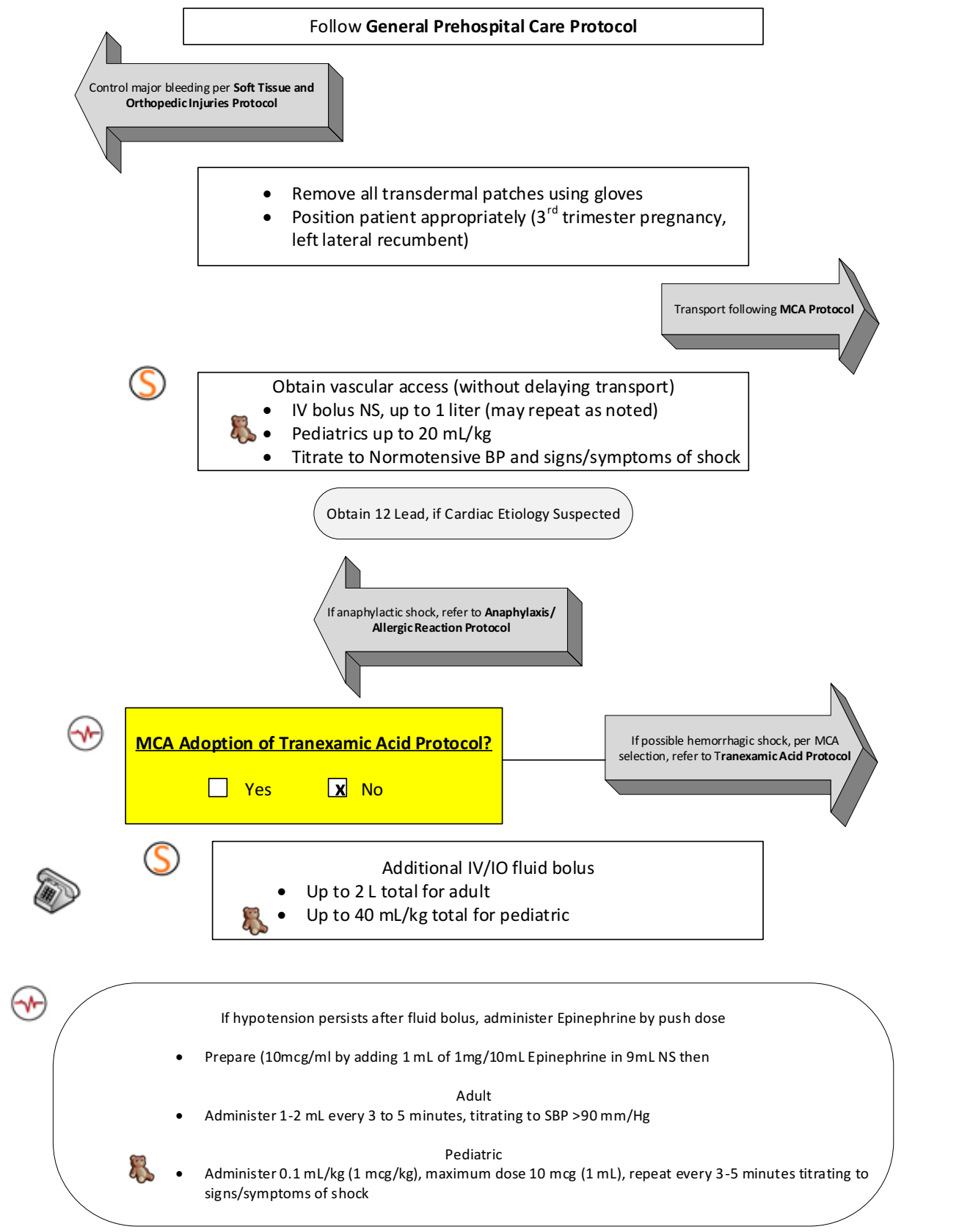
1. Administer 10-20 mcg (1-2 mL Epinephrine 10 mcg/mL)
2. Repeat every 3 to 5 minutes
3. Titrate to SBP greater than 90 mm/Hg



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





Oakland County Medical Control Authority  
GENERAL TREATMENT PROTOCOLS  
ANAPHYLAXIS / ALLERGIC REACTION

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### 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 1mg/mL.
  - a. Assist the patient in administration of their own epinephrine auto-injector, if available.
  - b. Adult Epinephrine auto-injector OR 0.3 mg (0.3 mL) of Epinephrine 1 mg/mL IM.








**MCA Approval of Epinephrine auto-injector for select MFR Agencies:**

YES  NO

**MCA Approval of OCMCA Epi-Kits for select MFR/BLS licensed units:**

YES  NO

-  i. If child weighs less than 10 kg (approx. 20 lbs.), contact medical control prior to Epinephrine.
  - ii. If child weighs between 10-30 kg (approx. 60 lbs.); administer 0.15 mg (0.15 mL) of Epinephrine 1 mg/mL IM OR via Pediatric Epinephrine auto-injector.
  - iii. Child weighing greater than 30 kg; administer 0.3 mg (0.3 mL) of Epinephrine 1 mg/mL IM OR via Epinephrine auto-injector.
  - iv. May repeat at 3-5 minute intervals if the patient remains hypotensive, if available.
4. Albuterol may be indicated. Refer to **Nebulized Bronchodilators Procedure**.
-  5. 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.
-  6. 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).
  7. Per MCA selection, administer bronchodilator per **Nebulized Bronchodilators Procedure**.
  8. 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)

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9. For MCA with both selected, Prednisone PO is the preferred medication. Methylprednisolone is secondary and reserved for when a PO route is inappropriate.

10. If patient remains hypotensive after treatment, refer to **Shock Protocol**.



11. If patient is symptomatic after treatment without hypotension.



a. Additional epinephrine via auto-injector OR additional 0.3 mg (0.3 mL) of Epinephrine 1 mg/mL IM.

\*MCA approval required for MFR auto-injector use.

## **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**.

*Oakland County Medical Control Authority*  
**Adult Treatment Protocols**  
Psychiatric Emergencies

February, 2018

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## ***Psychiatric Emergencies***

### **Definition:**

A patient with a psychiatric emergency is solely related to the effects of their mental illness and not an acute medical emergency requiring life-supporting intervention. The patient may have risk for harm of self and/or others, which can include an inability to care for their own activities of daily life.

### **Procedure:**

Transport all adult and pediatric psychiatric patients to the closest OCMCA hospital for medical clearance.

- If EMS personnel witness an act, or acts, or hear significant threats made by the patient that leads them to believe that the patient can reasonably be expected within the near future to intentionally or unintentionally seriously physically injure self or others, EMS personnel may complete a **Petition for Mental Health Treatment (PM201)**.
  - Petitions should be obtained from a hospital ED representative.
  - The Petition for Mental Health Treatment MUST be:
    - Completed in black ink only.
    - Completely free of errors.
- Patients may **only** refuse transport if they meet the criteria outlined in the **Refusal of Care Protocol**.
  - If care is refused, per Refusal of Care Protocol, EMS providers may consider referring patients experiencing crisis to Common Ground's 24/7 Resource and Crisis Center hotline at: 1-800-231-1127.

**NOTE:** If the psychiatric patient, his/her family, or other patient advocate requests transport to a specific OCMCA hospital, and that request requires bypassing a closer OCMCA hospital, the transporting crew must obtain online approval from the requested hospital prior to initiating transport.

### **Pre-Medical Control**

#### **MFR/EMT/Specialist/Paramedic**

1. Assure the scene is secure.
2. Follow **General Pre-hospital Care Protocol**.
3. Note patient history.
  - a. Current history: head injury, overdose/intoxication, central nervous system disease or infection, hypoglycemia, postictal state, or hypoxia.
4. If the patient presents with an altered mental status, refer to **Altered Mental Status Protocol**.
5. If medical emergency, follow appropriate protocol.
6. If the patient becomes violent or actions present a threat to self or others, restraint may be necessary. Refer to **Patient Restraint Protocol**.
7. If the patient presents with; agitation, confusion, hallucinations, erratic behavior, profuse diaphoresis, clothing shedding, unexplained strength and endurance, shouting out, and extreme thrashing while restrained, refer to **Excited Delirium Protocol**.

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**Post-Medical Control**

**Paramedic**




8. If chemical restraint is considered, refer to **Patient Restraint** and **Patient Sedation Protocols**.

**Legal Statutes:**

1. **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)
2. **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."
3. **Patient Destination** – R 325.22112 An ambulance operation, both ground and rotary, shall transport an emergency patient only to an organized emergency department located in and operated by one of the following:
  - a. A licensed hospital
  - b. A freestanding surgical outpatient facility
  - c. Provider-based ED
4. **“Emergency Patient”** – Sec 333.20904 of Public Act 368 defines an emergency patient as an individual with a physical or mental condition that manifests itself by acute symptoms of sufficient severity, including, but not limited to, pain such that a prudent layperson possessing average knowledge of health and medicine, could reasonably expect to result in one or all of the following:
  - a. Placing the health of the individual or, in the case of a pregnant woman, the health of the patient or the unborn child, or both, in serious jeopardy.
  - b. Serious impairment of bodily function.
  - c. Serious dysfunction of a body organ or part.

### ***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 ETCO<sub>2</sub> 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  $\geq 94\%$  but  $< 100\%$ . Titrate ETCO<sub>2</sub> 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**

