



**MICHIGAN
State Protocols**

Protocol Number

**Protocol Name
Obstetrics and Pediatrics
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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

(S) 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?

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

- 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

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

No

Transport, refer to appropriate protocol

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.

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

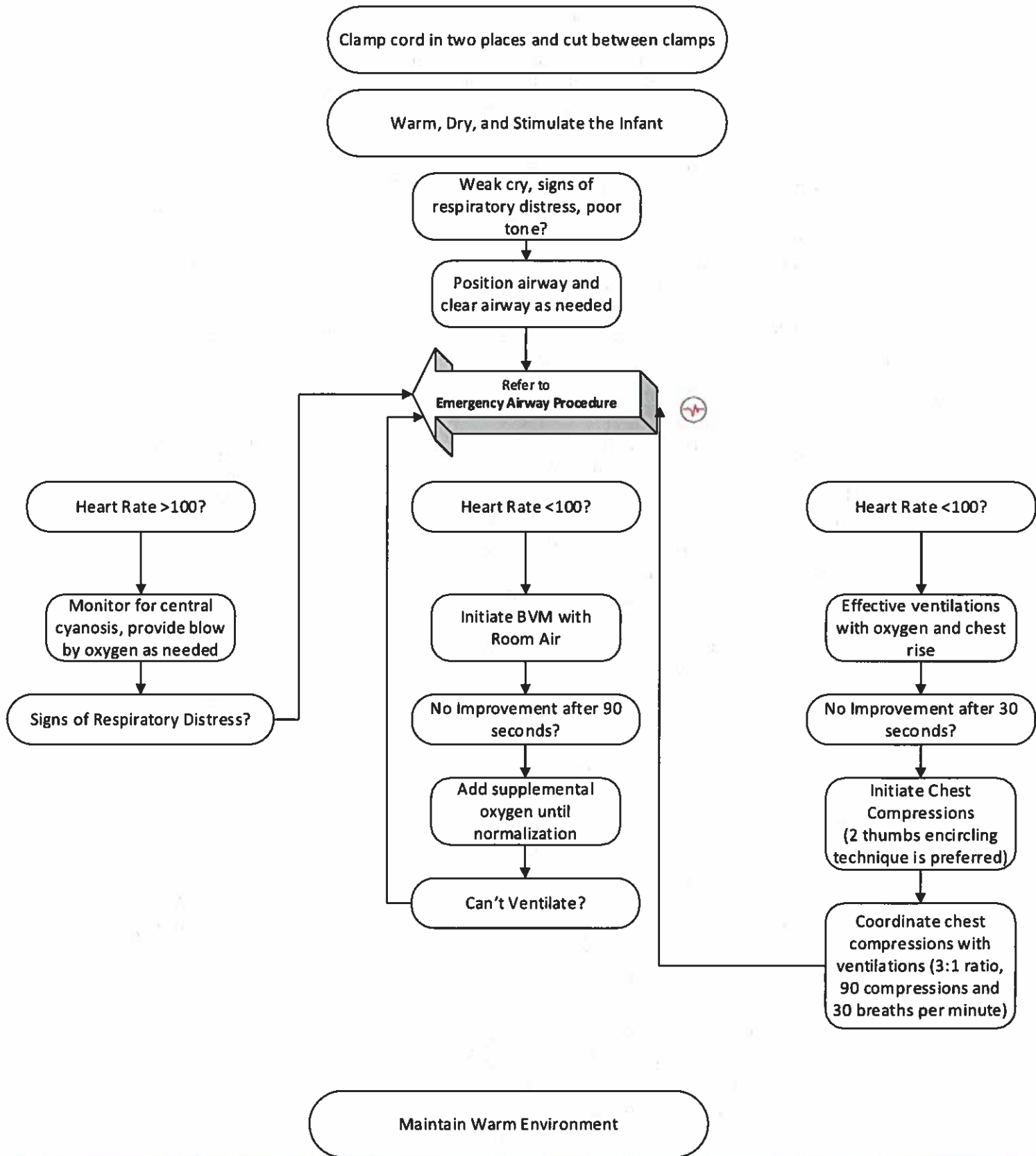
Sign	0	1	2
Appearance – skin color	Bluish or paleness	Pink or ruddy; hands or feet are blue	Pink or ruddy; entire body
Pulse – heart rate	Absent	Below 100	Over 100
Grimace – reflex irritability to foot slap	No response	Crying; some motion	Crying; vigorous
Activity – muscle tone	Limp	Some flexion of extremities	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**.



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

- Racementinephrine 2.25% inhalation solution via nebulizer

Administer by placing 0.5 mL of Racementinephrine 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

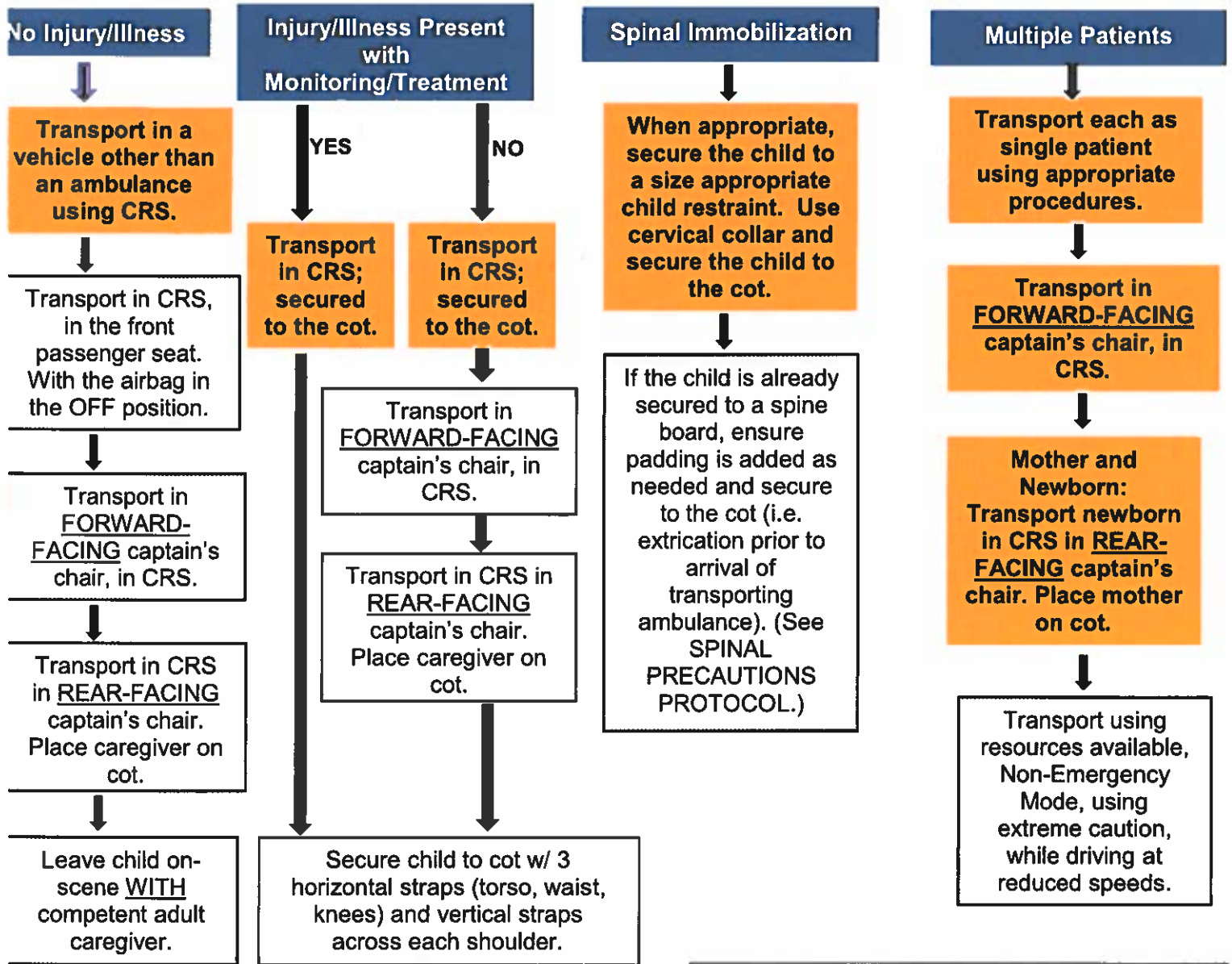
1. The child's age and weight shall be considered when determining an appropriate restraint system. Child seat models offer a wide range of age/weight limits, so each individual device must be evaluated to determine the appropriateness of use.
2. When possible, and with the exception of a minor vehicle 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.

- 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.



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.