ALL-LEVEL CONSOLIDATED

Pediatric Field Treatment Protocols

Version 2.0 (8/9/2021)

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Version History

The following is the update lineage to the EMS protocols manual. Editions prior to August 9, 2021, are NOT included in this history. Providers shall routinely check the system website (www.mcleancountyems.org) to verify this copy is the most current edition. Only the most current edition, as listed on the website, shall be used for medical guidance. Previous editions shall be considered obsolete.

Version	Date of Enactment	List of Changes from Previous
Initial Draft	N/A: Internal release only	N/A: not released to public
1.0	4/12/2019	Draft
1.1	7/11/2019	Draft proposal to IDPH
1.1a	12/13/2019	Final Approved Protocols
2.0	8/9/2021	Addition of Chewable Diphenhydramine

Miscellaneous Guidelines

- A patient **the age of fifteen (15) and under** is considered to be a pediatric patient. Utilization of pediatric treatment guidelines and the extent of care rendered is based on the general impression of the pediatric patient's condition, physical examination findings and the history of the event. *Patients 16 years or older will treated with adult protocols*. If patient exact age is not available: If they have an adult body habitus treat as an adult, if pediatric body habitus treat as a pediatric.

- The goal of the pediatric patient assessment process is similar to that of the adult patient. However, children are **not** "little adults". The causes of catastrophic events, such as cardiac arrest, are most often related to respiratory failure, shock or central nervous system injuries. Early recognition and treatment of the pediatric patient's injuries or illness is important to ensure the best outcome.

- When determining the extent of care needed to stabilize the pediatric patient, the EMS provider should take into consideration the patient's presentation, chief complaint, risk of shock and proximity to the receiving facility.

- IV access in pediatric patients is difficult and may complicate the situation. Indications and benefits vs. patient disturbance and complications should be considered.

- If the pediatric patient is in emergent need of fluids and/or medications (*i.e.* cardiac arrest, trauma, decompensated shock or severe burns) and peripheral IV access is unobtainable, proceed with intraosseous infusion.

- IV access should not significantly delay initiation of transportation or be attempted on scene with a trauma patient meeting load-and-go criteria.

- If fluid is being administered Buretrol tubing should be strongly considered if it is available.

- In a cardiac arrest situation IO is the preferable method for establishing access. IV's may be attempted initially. However, if IV access has not been obtained in 90 seconds' providers shall proceed to IO placement, assuming no contraindications.

- In is preferred that when utilizing an AED for a child under the age of 1 a dose attenuator is utilized, however in the absence of a attenuator, the normal AED may be utilized.

- When transporting the pediatric patient, the patient shall be transported by a secure and approved means. When being transported on the stretcher a stretcher attachment such as a pedi-mate or other system approved child restraint system shall be used. The utilization of car seats is permitted. However, be aware that most car seats that are built in to seats in the ambulance are only approved for children 40 lbs. and above. Pediatric patients that are in spinal motion restriction will have all applicable stretcher straps secured.

- **Fluid Note:** Lactated Ringers will be the primary fluid for our EMS system. However, in the event of a shortage, Normal Saline may be used as a substitute for all protocols that use Lactated Ringers. This is only applicable during a shortage. All medications given via infusion must use Normal Saline to administer the infusion.

- **Pediatric Dosing:** Follow EMS protocols for medication dosing or System approved pediatric dosing tool (i.e Handtevy)

- If a patient does not fall under a protocol, treat using Routine Medical or Trauma (based on mechanism of injury vs nature of illness). Contact Medical Control for questions or guidance on treatment plan.

- **EMR = GREEN**

- **BLS = BLUE**

- **ILS = PURPLE**

- **ALS = RED**

PEDIATRIC INITIAL ASSESSMENT

ALS/ILS/BLS/EMR GUIDELINE

I. Scene size up

- Identify possible hazards.
- Assure safety for patient and responder.
- Observe for mechanism of injury/nature of illness.
- Note anything suspicious at the scene, i.e., medications, household chemicals, other ill family members.
- Assess any discrepancies between the history and the patient presentation, i.e., infant fell on hardwood floor; however, floor is carpeted.
- Initiate appropriate body substance isolation (BSI) precautions.
- Determine the number of patients.

II. General Approach to the Stable/Conscious Pediatric Patient

A. Assessments and interventions must be tailored to each child in terms of age, size and development.

- Make eye contact and smile at the child.
- Keep voice at even quiet tone, don't yell.
- Speak slowly; use simple, age appropriate terms.
- Use toys or penlight as distractors; make a game of assessment.
- Keep small children with their caregiver(s); encourage assessment while caregiver is holding child.
- Kneel down to the level of the child if possible.
- Be cautious in use of touch. In the stable child, make as many observations as possible before touching (and potentially upsetting) the child.
- Adolescents may need to be interviewed without their caregivers present if accurate information is to be obtained regarding drug use, alcohol use, LMP, sexual activity, child abuse.

B. While walking up to the patient, observe/inspect the following:

- General appearance, age appropriate behavior. Does child have a malnourished appearance? Is child looking around, responding with curiosity or fear, playing, sucking on a pacifier or bottle, quiet, eyes open but not moving much or uninterested in environment?
- Obvious respiratory distress/increased work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.
- Color: pink, pale, flushed, cyanotic, mottled.
- Position of the child. Are the head, neck or arms being held in a position suggestive of spinal injury? Is the patient sitting up or tripoding?
- Level of consciousness, i.e., awake vs asleep or unresponsive.

- Muscle tone: good vs limp.
- Movement: spontaneous, purposeful, symmetrical.
- Obvious injuries, bleeding, bruising, impaled objects or gross deformities.
- Assess for pain.
- Determine weight - ask child or caretakers or use length/weight tape.

III. Initial Assessment

A. Airway Assessment and Maintenance with Spinal Motion Restriction

- Maintainable with assistance: positioning.
- Maintainable with adjuncts: oral airway, nasal airway.
- Maintainable with endotracheal tube.
- Listen for any audible airway noises, i.e., stridor, snoring, gurgling, wheezing.
- Patency: suction secretions as necessary.

B. Breathing

- Rate and rhythm of respirations. Compare to normal rate for age and situation.
- Chest expansion: symmetrical.
- Breath sounds: compare both sides and listen for sounds (present, absent, normal, abnormal).
- Positioning: sniffing position, tripod position.
- Work of breathing: retractions, nasal flaring, accessory muscle use, head bobbing, grunting.

C. Circulation

- Heart rate: compare to normal rate for age and situation.
- Central/truncal pulses (brachial, femoral, carotid): strong, weak or absent.
- Distal/peripheral pulses: present/absent, thready, weak, strong.
- Color: pink, pale, flushed, cyanotic, mottled.
- Skin temperature: hot, warm, cool.
- Blood pressure: compare to normal for age of child. Must use appropriately sized cuff. Blood Pressure is not routinely assessed for patients <3 years of age
- Hydration status: anterior fontanel in infants, mucous membranes, skin turgor, crying tears, urine output history.

D. Disability - Brief Neuro Examination

- Assess Responsiveness
  - **A** Alert
  - **V** Responds to verbal stimuli
  - **P** Responds to painful stimuli
  - **U** Unresponsive
- Assess pupils.
- Assess for transient numbness/tingling.

E. Expose and Examine

- Expose the patient as appropriate based on age and severity of illness.
- Initiate measures to prevent heat loss and keep the child from becoming hypothermic.

IV. Focused History/Physical Assessment

Tailor assessment to the needs of the patient. Rapidly examine areas specific to the chief complaint.

A. Patient History - Acquire during/incorporate into physical exam.

S **Signs & Symptoms** as they relate to the chief complaint.

A **Allergies** to medications, foods, environment

M **Medications:** prescribed, over-the-counter; compliance with prescribed dosing regimen; time, date and amount of last dose

P **Past Pertinent Medical History**

- Pertinent medical or surgical problems
- Preexisting diseases/chronic illness
- Previous hospitalizations
- Currently under medical care
- For infants, obtain a neonatal history (gestation, prematurity, congenital anomalies, was infant discharged home at the same time as the mother)

L **Last oral intake** of liquid/food ingested.

E **Events surrounding current problem**

- Onset, duration and precipitating factors
- Associated factors such as toxic inhalants, drugs, alcohol
- Injury scenario and mechanism of injury
- Treatment given by caregiver

B. Responsive Medical Patients

- Perform rapid assessment based on chief complaint. A full review of systems may not be necessary. If chief complaint is vague, examine all systems.

C. Unresponsive Medical Patients

- Perform rapid assessment: ABC's, quick head-to-toe exam.
- Emergency care is based on signs and symptoms, initial impressions and standard operating procedures.

D. Trauma patient with **NO** significant mechanism of injury.

- Focused assessment is based on specific injury site.

E. Trauma patient **WITH** significant mechanism of injury

- Perform rapid assessment of all body systems.

V. Detailed Assessment

A. Performed to detect non-life threatening conditions and to provide care for those conditions/injuries. Usually performed en route. May be performed on scene if transport is delayed.

- Inspect and palpate each of the major body systems for the following:
  - **D**eformities
  - **C**ontusions
  - **A**brasions
  - **P**enetrations/punctures
  - **B**urns
  - **L**acerations
  - **S**welling/edema
  - **T**enderness
  - **I**nstability
  - **C**repitus

- Auscultation of breath and heart sounds as well as blood pressure readings may be required in the field.

VI. Ongoing Assessment

To effectively maintain awareness of changes in the patient's condition, repeated assessments are essential and should be performed **at least every 5 minutes on the unstable patient**, and **at least every 15 minutes on the stable patient.**

VII. Considerations for Children with Special HealthCare Needs (CSHCN)

- Track CSHCN in your service community and become familiar with both the child

as well as their anticipated emergency care needs.

- Refer to child's emergency care plan formulated by their medical providers, if available. Understanding the child's baseline will assist in determining the significance of altered physical findings. Parents/caregivers are the best source of information on: medications, baseline vitals, functional level/normal mentation, likely medical complications, equipment operation and troubleshooting, emergency procedures.
- Regardless of underlying condition, assess in a systematic and thorough manner.
- Use parents/caregivers/home health nurses as medical resources at home and en route.
- Be prepared for differences in airway anatomy, physical development, cognitive development and possibly existing surgical alterations or mechanical adjuncts. Common home therapies include: respiratory support (oxygen, apnea monitors, pulse oximeters, tracheostomies, mechanical ventilators), nutrition therapy (nasogastric or gastrostomy feeding tubes), intravenous therapy (central venous catheters), urinary catheterization or dialysis (continuous ambulatory peritoneal dialysis), ostomy care, orthotic devices, communication or mobility devices, or hospice care.
- Communicate with the child in an age appropriate manner. Maintain communication with and remain sensitive to the parents/caregivers and the child.
- The most common emergency encountered with these patients is respiratory related and so familiarity with respiratory emergency interventions/adjuncts/treatment is appropriate.

Routine Medical Care

EMR

1. Open/Maintain airway as needed
2. Protect child from environmental exposure
3. Reassure patient and caregiver
4. Patient positioning will be based on assessment, condition, age etc.
5. Attach pulse oximeter and obtain reading
6. Administer **Oxygen** in accordance with oxygen procedure in procedure manual
7. Monitor patients level of consciousness, vital signs, etc. for any acute changes

BLS

1. Open/Maintain airway as needed
2. Protect child from environmental exposure
3. Reassure patient and caregiver
4. Patient positioning will be based on assessment, condition, age etc.
5. Attach pulse oximeter and obtain reading
6. Administer **Oxygen** in accordance with oxygen procedure in procedure manual
7. Monitor patients level of consciousness, vital signs, etc. for any acute changes
8. Establish on-line medical control as indicated
9. Transport should be initiated at earliest opportunity

ILS

1. Open/Maintain airway as needed
2. Protect child from environmental exposure
3. Reassure patient and caregiver
4. Patient positioning will be based on assessment, condition, age etc.
5. Attach pulse oximeter and obtain reading
6. Administer **Oxygen** in accordance with oxygen procedure in procedure manual
7. Monitor patients level of consciousness, vital signs, etc. for any acute changes
8. Establish on-line medical control as indicated
9. Transport should be initiated at earliest opportunity
10. Initiate EKG monitoring if indicated
11. Necessity of IV line is determined by patient condition and chief complaint
12. If IV fluid is indicated **Lactated Ringers** TKO (8-15 gtts/ min)
13. If fluid bolus is indicated administer once, 20 ml/kg of **Lactated Ringers** over two minutes
14. Utilize caution if additional fluid bolus is required. Do not cause fluid overload. Max fluid bolus is 60 ml/kg

Routine Medical Care

ALS

1. Open/Maintain airway as needed
2. Protect child from environmental exposure
3. Reassure patient and caregiver
4. Patient positioning will be based on assessment, condition, age etc.
5. Attach pulse oximeter and obtain reading
6. Administer **Oxygen** in accordance with oxygen procedure in procedure manual
7. Monitor patients level of consciousness, vital signs, etc. for any acute changes
8. Establish on-line medical control as indicated
9. Transport should be initiated at earliest opportunity
10. Initiate EKG monitoring if indicated
11. Necessity of IV line is determined by patient condition and chief complaint
12. If IV fluid is indicated **Lactated Ringers** TKO (8-15 gtts/ min)
13. If fluid bolus is indicated administer once, 20 ml/kg of **Lactated Ringers** over two minutes
14. Utilize caution if additional fluid bolus is required. Do not cause fluid overload. Max fluid bolus is 60 ml/kg

NOTE ILS/ALS: Neonates should receive fluid bolus of 10 ml/kg as opposed to the standard 20

General Cardiac Arrest

EMR

1. Determine unresponsiveness, confirm that a transport unit, and that ALS is en route
2. Maintain patent airway and assess breathing. If breathing is absent or inadequate, assist breathing with BVM
3. If pulseless begin CPR in accordance with the appropriate AHA guideline for CPR
4. Apply AED after 2 minutes of CPR to determine if defibrillation is needed
    a. Pediatric pads are preferred, however adult pads can be utilized in the anterior (front), posterior (back) positions
    b. Continue to follow directions of AED
5. If patient regains pulse at any time, maintain airway and assist with ventilations as needed

BLS

1. Determine unresponsiveness, confirm that a transport unit, and that ALS is en route
2. Maintain patent airway and assess breathing. If breathing is absent or inadequate, assist breathing with BVM
3. If pulseless begin CPR in accordance with the appropriate AHA guideline for CPR
4. Apply AED after 2 minutes of CPR to determine if defibrillation is needed
    a. Pediatric pads are preferred, however adult pads can be utilized in the anterior (front), posterior (back) positions
    b. Continue to follow directions of AED
5. If patient regains pulse at any time, maintain airway and assist with ventilations as needed
6. Establish on-line medical control as indicated
7. Transport should be initiated at earliest opportunity

ILS

1. Determine unresponsiveness, confirm that a transport unit, and that ALS is en route
2. Maintain patent airway and assess breathing. If breathing is absent or inadequate, assist breathing with BVM
3. If pulseless begin CPR in accordance with the appropriate AHA guideline for CPR
4. If patient regains pulse at any time, maintain airway and assist with ventilations as needed
5. Establish on-line medical control as indicated
6. Transport should be initiated at earliest opportunity
7. Refer to appropriate rhythm protocol
8. V-fib or pulseless V-tach, defibrillate at for first shock 2 J/kg
9. Subsequent shocks defibrillate at 4 J/kg
10. Establish IV/IO access

General Cardiac Arrest

ALS

1. Determine unresponsiveness, confirm that a transport unit, and that ALS is en route
2. Maintain patent airway and assess breathing. If breathing is absent or inadequate, assist breathing with BVM
3. If pulseless begin CPR in accordance with the appropriate AHA guideline for CPR
4. If patient regains pulse at any time, maintain airway and assist with ventilations as needed
5. Establish on-line medical control as indicated
6. Transport should be initiated at earliest opportunity
7. Refer to appropriate rhythm protocol
8. V-fib or pulseless V-tach, defibrillate at for first shock 2 J/kg
9. Subsequent shocks defibrillate at 4 J/kg
10. Establish IV/IO access

Ventricular Fibrillation/Pulseless Ventricular Tachycardia

EMR & BLS

1. Refer to General Cardiac Arrest Protocol

ILS & ALS

1. General Cardiac Arrest Protocol
2. **Epinephrine** 1:10,000: 0.01 mg/kg IV/IO repeat every 3-5 minutes as needed
    a. Minimum dose 0.1 mg
    b. Max Single Dose 1 mg
3. **Amiodarone** 5 mg/kg IV/IO
    a. Single dose
4. Consider **D10W** 5mL/kg infusion, max dose of 250mL, if blood sugar is < 60 mg/dl

Cardiac Arrest Asystole/PEA

EMR & BLS

1. General Cardiac Arrest Protocol

ILS & ALS

1. General Cardiac Arrest Protocol
1. **Epinephrine** 1:10,000: 0.01 mg/kg IV/IO repeat every 3-5 minutes as needed
    a. Minimum dose 0.1 mg
    b. Max Single Dose 1 mg
2. Consider **D10W** 5mL/kg infusion, max dose of 250mL, if blood sugar is < 60 mg/dl

Notes:

1. Pediatric cardiac arrest is often related to hypoxia and poor ventilation. Ensure proper oxygenation and ventilation.
2. Do not spend time at the scene attempting to do procedures you may not feel confident in performing
3. Broselow tapes and other length based systems such as the Handtevy are an effective means to estimate weight. Refer to MCAEMS protocols for medication doses

Bradycardia

EMR

1. Routine Medical Care
2. Monitor respiratory status and SPO2
3. **Oxygen** 15 lpm via BVM if child in significant respiratory distress
4. **Oxygen** 15 lpm via NRB if child is alert and ventilating appropriately
5. For children <12 months of age: If despite Oxygen and BVM ventilations the child continues to appear hypo perfused and the pulse rate is <60 initiate compressions

BLS

1. Routine Medical Care
2. Monitor respiratory status and SPO2
3. **Oxygen** 15 lpm via BVM if child in significant respiratory distress
4. **Oxygen** 15 lpm via NRB if child is alert and ventilating appropriately
5. For children <12 months of age: If despite Oxygen and BVM ventilations the child continues to appear hypo perfused and the pulse rate is <60 initiate compressions
6. Monitor respiratory status, SPO2, and waveform capnography if available

ILS

1. Routine Medical Care
2. Monitor respiratory status and SPO2
3. **Oxygen** 15 lpm via BVM if child in significant respiratory distress
4. **Oxygen** 15 lpm via NRB if child is alert and ventilating appropriately
5. For children <12 months of age: If despite Oxygen and BVM ventilations the child continues to appear hypo perfused and the pulse rate is <60 initiate compressions
6. Monitor respiratory status, SPO2, and waveform capnography if available
7. Initiate IV/IO and administer Lactated Ringers Bolus 20 ml/kg, may repeat once
8. **Epinephrine** 1:10,000 0.01 mg/kg IV/IO (Max dose 1 mg, Minimum dose 0.1 mg) WITH MEDICAL CONTROL ORDER
9. **Atropine** 0.02 mg/kg IV/IO (Max dose 1 mg, Minimum dose 0.1 mg) for children > 6 months old WITH MEDICAL CONTROL ORDER
10. If patient remains bradycardic with continued sign of hypo perfusion initiate transcutaneous pacing WITH MEDICAL CONTROL ORDER
    a. Consider sedation with **Versed** 0.1 mg/KG IV/IO (Max Dose 2 mg) or 0.2mg/kg IN (max dose 2 mg)

ALS

1. Routine Medical Care
2. Monitor respiratory status and SPO2
3. **Oxygen** 15 lpm via BVM if child in significant respiratory distress
4. **Oxygen** 15 lpm via NRB if child is alert and ventilating appropriately

5. For children <12 months of age: If despite Oxygen and BVM ventilations the child continues to appear hypo perfused and the pulse rate is <60 initiate compressions
6. Monitor respiratory status, SPO2, and waveform capnography if available
7. Initiate IV/IO and administer Lactated Ringers Bolus 20 ml/kg, may repeat once
8. **Epinephrine** 1:10,000 0.01 mg/kg IV/IO (Max dose 1 mg, Minimum dose 0.1 mg)
9. **Atropine** 0.02 mg/kg IV/IO (Max dose 1 mg, Minimum dose 0.1 mg) for children > 6 months old with MEDICAL CONTROL
10. If patient remains bradycardic with continued sign of hypo perfusion initiate transcutaneous pacing with a rate of 90-100 BPM
    a. Consider sedation with **Versed** 0.1 mg/KG IV/IO (Max Dose 2 mg) or 0.2mg/kg IN (max dose 2 mg)
    b. May repeat once if BP > 90mmHg and respiratory rate is >10. Additional doses require MEDICAL CONTROL

Note:

- **Before administering epinephrine, always assess for mechanical problems with oxygen delivery. (Oxygen on? Oxygen flowing, etc.)**

Atropine is contraindicated for infants <6 months of age.

- **ILS/ALS: Search for possible contributing factors:**
  Hypovolemia, Hypoxia, Hypoglycemia, Hypothermia, Toxins, Cardiac Tamponade, Trauma (hypovolemia, increased ICP)

Cardiogenic Shock

EMR & BLS

1. Routine Medical Care
2. Support ABCs, re-assess patient every 5 minutes.
3. Contact ALS for intercept.

ILS

1. Routine Medical Care
2. Identify and treat any cardiac rhythm disturbance per appropriate protocol.
3. Consider **fluid bolus** of up to 20 ml/kg max **SEE NOTE**
4. Support ABCs, Re-assess patient every 5 minutes.
5. Contact ALS intercept.

ALS

1. Routine Medical Care
2. Identify and treat any cardiac rhythm disturbance per appropriate protocol.
3. Consider **fluid bolus** of up to 20 ml/kg max **SEE NOTE**
4. Consider **Levophed** 0.1 – 2mcg/kg/min with Medical Control Order.
5. Support ABCs, Re-assess patient every 5 minutes.

****Note: Fluids may need to be limited in cardiogenic shock. Contact MEDICAL CONTROL as needed for guidance.**

Narrow Complex Tachycardia's (Stable)

EMR

1. Routine Medical Care

BLS

1. Routine Medical care
2. Perform 12 lead EKG
    a. DO NOT delay transport for EKG acquisition

ILS

1. Routine Medical care
2. Perform 12 lead EKG
    a. DO NOT delay transport for EKG acquisition
3. Establish IV/IO
4. Administer **Lactated Ringers** Bolus 20 ml/kg
5. **Adenocard** 0.1 mg/kg IV (Max dose 6 mg) with MEDICAL CONTROL
6. **Adenocard** 0.2 mg/kg IV (Max dose 12 mg) with MEDICAL CONTROL
7. **Adenocard** 0.2 mg/kg IV (Max dose 12 mg) with MEDICAL CONTROL

ALS

1. Routine Medical care
2. Perform 12 lead EKG
    a. DO NOT delay transport for EKG acquisition
3. Establish IV/IO
4. Administer **Lactated Ringers** Bolus 20 ml/kg
5. **Adenocard** 0.1 mg/kg IV (Max dose 6 mg) with MEDICAL CONTROL
6. **Adenocard** 0.2 mg/kg IV (Max dose 12 mg) with MEDICAL CONTROL
7. **Adenocard** 0.2 mg/kg IV (Max dose 12 mg) with MEDICAL CONTROL

Narrow Complex Tachycardia's (Unstable)

EMR

1. Routine Medical Care

BLS

1. Routine Medical Care
2. Perform 12 lead EKG
    a. **DO NOT** delay transport for EKG acquisition

ILS & ALS

1. Routine Medical Care
2. Perform 12 lead EKG
    a. **DO NOT** delay transport for EKG acquisition
3. Synchronized Cardioversion at 1 J/KG
    a. If situation allows, consider sedation with **Versed** 0.1 mg/KG IV/IO (Max dose 2 mg) or 0.2mg/kg IN (max dose 2 mg)
4. Synchronized Cardioversion at 2 J/kg

Note:

1. **A patient is considered unstable in the following instances**
    a. **Absent peripheral pulses**
    b. **Decreasing consciousness**
    c. **Central cyanosis**
    d. **Significant Hypotension**

Wide Complex Tachycardia with a Pulse (Stable)

EMR

1. Routine Medical Care

BLS

1. Routine Medical Care
2. Monitor respiratory status, SPO2, and waveform capnography if available

ILS & ALS

1. Routine Medical Care
2. Monitor respiratory status, SPO2, and waveform capnography if available
3. Attempt Valsalva Maneuver, for infants and young children apply ice pack to face
4. Establish IV/IO administer **Lactated Ringers** Bolus 20 ml/kg
5. **Amiodarone** 5 mg/kg IV/IO over 20 minutes (max dose 300mg) MEDICAL MEDICAL CONTROL

Wide Complex Tachycardia with a Pulse (Unstable)

EMR

1. Routine Medical Care

BLS

1. Routine Medical Care

ILS

1. Routine Medical Care
2. Synchronized Cardioversion 1 J/kg
    a. If situation allows, consider sedation with **Versed** 0.1 mg/KG IV/IO (Max dose 2 mg) or 0.2mg/kg IN (max dose 2 mg)
2. Synchronized Cardioversion 2 J/kg

ALS

1. Routine Medical Care
2. Synchronized Cardioversion 1 J/kg
    a. If situation allows, consider sedation with **Versed** 0.1 mg/KG IV/IO (Max dose 2 mg) or 0.2mg/kg IN (max dose 2 mg)
3. Synchronized Cardioversion 2 J/kg
4. If Torsades de Pointes consider **Magnesium Sulfate** 25mg/kg IV/IO

Note:

- **A patient is considered unstable in the following instances**
    a. **Absent peripheral pulses**
    b. **Decreasing consciousness**
    c. **Central cyanosis**
    d. **Significant Hypotension**
- **Cardiac dysrhythmias such as V-tach are rare in children. Ask the caregiver if the child has chronic or genetic cardiac condition.**
- **V-tach with a pulse could be from a serious system illness, hypoxia or dehydration.**

Respiratory Distress

EMR & BLS

1. Routine Medical Care
2. Perform airway maneuver to open airway
3. Suction as needed
4. Maintain C-spine precautions if indicated
5. If foreign body suspected, open mouth and remove the item if visible

If Breathing	Not Breathing
1. Support ABC's 2. Administer Oxygen as needed 3. Assess lung sounds 4. Support ventilations with BVM as indicated 5. Complete initial assessment 6. Keep warm 7. Continue support 8. If Cardiopulmonary Compromise, follow appropriate protocol	1. Administer Oxygen via BVM 2. If chest rise and fall is adequate secure the airway with the appropriate device 3. Continue to reassess 4. If chest rise and fall is **not** adequate reposition the airway 5. Begin CPR if needed 6. Keep warm 7. Continue support 8. If Cardiopulmonary compromise, follow appropriate protocol 9. If needed refer to diabetic emergency and/or Toxic Exposure protocols as needed

ILS & ALS

1. Continue BLS Care
2. Consider ALS transport
3. Perform airway maneuver to open airway
4. Suction as needed
5. Maintain C-spine precautions if indicated
6. If foreign body suspected, open mouth and remove the item if visible
7. If croup suspected, consider administration of Racemic Epinephrine **(ALS Only)**

Not Breathing
1. Administer Oxygen via BVM with BVM ventilations 2. If chest rise and fall is adequate continue to assess and monitor 3. Consider intubation 4. If chest rise and fall is **not** adequate reposition the airway 5. Begin CPR if needed 6. If needed, Consider per trach (ALS Only) or needle cricothyrotomy 7. Keep warm 8. Establish IV/IO access, Lactated Ringers TKO 9. If needed refer to diabetic emergency and/or Toxic Exposure protocols as needed.

Note:

- **Studies have shown that BLS management of pediatric airways may be just as effective as intubation. Do not spend time on scene with intubation procedures.**
- **Gastric distention is very common in pediatric patients and may cause poor compliance. Ventilating too fast or giving too much tidal volume is the top two reasons for distention. Use proper ventilation techniques and an appropriately sized BVM for the pediatric patient.**

Foreign Body Airway Obstruction

EMR & BLS

An airway obstruction is life threatening and must be corrected immediately upon discovery.

1. If the patient has an obstructed airway and is still conscious:

a) Encourage the patient to cough.

b) Perform 5 abdominal thrusts (5 back blows & 5 chest thrusts in the infant) if the cough is unsuccessful.

c) Repeat until the obstruction is relieved or the patient becomes unconscious.

d) Administer oxygen at 15 L/min if the patient has a partial airway obstruction and is still able to breathe.

2. If the patient is unconscious:

a) Open the patient's airway and attempt to ventilate.

b) Reposition the head and reattempt to ventilate if initial attempt is unsuccessful.

c) Perform 5 abdominal thrusts (5 back blows/chest thrusts in the infant).

d) Remove object if visualized. **Do not perform a blind finger sweep of the patient's mouth. Reattempt to ventilate.**

e) Repeat step (c) if obstruction persists.

f) Immediately initiate ALS intercept.

ILS & ALS

1. If the patient has an obstructed airway and is still conscious:
    a. Encourage the patient to cough.
    b. Perform 5 abdominal thrusts (5 back blows & 5 chest thrusts in the infant) if the cough is unsuccessful.
    c. Repeat until the obstruction is relieved or the patient becomes unconscious.
    d. Administer oxygen at 15 L/min if the patient has a partial airway obstruction and is still able to breathe.
2. If the patient is unconscious:
    a. Open the patient's airway and attempt to ventilate.
    b. Reposition the head and reattempt to ventilate if initial attempt is unsuccessful.
    c. Perform 5 abdominal thrusts (5 back blows/chest thrusts in the infant).
    d. Remove object if visualized. **Do not perform a blind finger sweep of the patient's mouth. Reattempt to ventilate.**
    e. Repeat step (c) if obstruction persists.
3. f) Immediately initiate ALS intercept if applicable.
4. Attempt direct extraction via laryngoscope and Magill forceps.
    a. Use the laryngoscope and examine the upper airway for foreign matter and suction as needed.
    b. Remove any foreign objects with forceps and suction.

c. Re-establish an open airway and attempt to ventilate.
d. If the obstruction is relieved, continue with airway control, ventilations, assessment and care.
e. Continue abdominal thrusts (or back blows/chest thrusts) sequence if unable to relieve obstruction and expedite transport.

5. If all other attempts to remove foreign body have failed, Consider Needle cricothyrotomy

Pediatric Tracheostomy / Vent Care

Tracheostomy Tube

EMR

1. Assess Work of Breathing and lung sounds
2. Consider ALS
3. If tube has obstruction: Suction with a soft suction catheter
4. If Suctioning Fails, repeat after removing inner catheter of Tracheostomy Tube
5. Request caregiver to change Tracheostomy Tube
6. If Ventilatory Support is needed or complete obstruction: Ventilate with BVM to tracheostomy tube
7. If BVM ventilation to tube is unsuccessful: Deflate cuff, cover stoma, and attempt BVM ventilations with face piece to mouth

BLS

1. Assess Work of Breathing and lung sounds
2. Consider ALS
3. If tube has obstruction: Suction with a soft suction catheter
4. If Suctioning Fails, repeat after removing inner catheter of Tracheostomy Tube
5. Request caregiver to change Tracheostomy Tube
6. If Ventilatory Support is needed or complete obstruction: Ventilate with BVM to tracheostomy tube
7. If BVM ventilation to tube is unsuccessful: Deflate cuff, cover stoma, and attempt BVM ventilations with face piece to mouth
8. For wheezing: Refer to Pediatric Asthma Protocol

ILS & ALS

1. Assess Work of Breathing and lung sounds
2. Consider ALS
3. If tube has obstruction: Suction with a soft suction catheter
4. If Suctioning Fails, repeat after removing inner catheter of Tracheostomy Tube
5. Request caregiver to change Tracheostomy Tube
6. If Ventilatory Support is needed or complete obstruction: Ventilate with BVM to tracheostomy tube
7. If BVM ventilation to tube is unsuccessful: Deflate cuff, cover stoma, and attempt BVM ventilations with face piece to mouth
8. For wheezing: Refer to Pediatric Asthma Protocol
9. If complete blockage remains, consider replacing tracheostomy tube with an appropriately sized ET Tube

Ventilator Patients

EMR

1. If ventilator is not functioning properly, or patient appears to need further support: Remove patient from ventilator and assist ventilations using a BVM to the Tube

BLS

1. Continue EMR Care
2. Remove patient from ventilator and utilize BVM ventilations for Transport
3. Notify receiving facility as early as possible for a ventilator patient being transported

ILS

1. Continue BLS Care

ALS

1. Continue ILS Care

Note: Consider using an on-scene caregiver as a source of information, as they will likely have a significant knowledge of all devices and patient history.

Note: If the patient has a portable ventilator which appears to be functioning appropriately, have caregiver transition patient to portable ventilator for transport.

Allergic Reaction

EMR

Local Reaction

1. Routine Medical Care
2. Apply Ice Pack to the site

Respiratory Distress / Cardiopulmonary Compromise

1. Routine Medical Care
2. Support ABC's
3. Assist Patient with their Epi-Pen if they have one prescribed and present
4. Observe
5. Keep Warm
6. Ensure ALS is en route

BLS

Local Reaction

1. Routine Medical Care
2. Apply Ice Pack to the site
3. If child is between the ages of 6 – 12 years old, administer 1-2 (12.5-25mg) tablets of chewable **DIPHENHYDRAMINE.** If child is between the ages of 13-16 years old, administer 2-4 (25-50mg) tablets of chewable **DIPHENHYDRAMINE.**
    a. Only administer for localized reactions, and to children who can chew and swallow, with no airway compromise.

Respiratory Distress / Cardiopulmonary Compromise

1. Routine Medical Care
2. Administer **EPINEPHRINE (weight dependent)**
    a. If your agency IS approved for IM injections administer 0.3 mg of **EPINEPHRINE** for children over 30kg. If child weighs less than 30kg, administer 0.15mg of **EPINEPHRINE** IM. Use 1 inch 25-27g needle.
    b. If your agency is NOT approved for IM injections, administer **EPINEPHRINE** auto injector (Epi-Pen) 0.3mg for children over 30kg and **EPINEPHRINE** auto injector (EPI-Pen Jr.) 0.15 for children less than 30kg
3. If no improvement after **EPINEPHRINE** administration contact MEDICAL CONTROL for a repeat dose order
4. For Bronchospasm not relieved by Epinephrine, administer **ALBUTEROL SULFATE**, 2.5mg in 3ml NS via nebulizer. Repeat up to 2x as needed.
5. Ensure ALS is en route

ILS

Local Reaction

1. Routine Medical Care
2. Apply Ice Pack to the site
3. **DIPHENHYDRAMINE** IV/IO/IM 1mg/kg maximum 50mg

4. *OR* If child is between the ages of 6 – 12 years old, administer 1-2 (12.5-25mg) tablets of chewable **DIPHENHYDRAMINE.** If child is between the ages of 13-16 years old, administer 2-4 (25-50mg) tablets of chewable **DIPHENHYDRAMINE.**
    a. Only administer for localized reactions, and to children who can chew and swallow, with no airway compromise.

Respiratory Distress / Cardiopulmonary Compromise

1. Routine Medical Care
2. Administer **EPINEPHRINE** 0.01mg/kg 1: 1,000 SQ/IM as indicated. Maximum 0.3 ml per single dose. May repeat every 15 minutes
3. For Bronchospasm not relieved by Epinephrine, administer **ALBUTEROL SULFATE**, 2.5mg in 3ml NS mixed with **IPRATROPIUM** 0.5mg via nebulizer
4. Administer **EPINEPHRINE** IV/IO 1:10,000 0.01mg/kg Slowly. Repeat every 5 minutes as indicated
5. **DIPHENHYDRAMINE** IV/IO/IM 1mg/kg maximum 50mg
6. Administer a **LACTATED RINGERS** fluid bolus 20mg/kg. Repeat as needed maximum 60ml/kg
7. Ensure ALS is en route

ALS

Local Reaction

1. Routine Medical Care
2. Apply Ice Pack to the site
3. **DIPHENHYDRAMINE** IV/IO/IM 1mg/kg maximum 50mg
4. *OR* If child is between the ages of 6 – 12 years old, administer 1-2 (12.5-25mg) tablets of chewable **DIPHENHYDRAMINE.** If child is between the ages of 13-16 years old, administer 2-4 (25-50mg) tablets of chewable **DIPHENHYDRAMINE.**
    a. Only administer for localized reactions, and to children who can chew and swallow, with no airway compromise.

Respiratory Distress / Cardiopulmonary Compromise

1. Routine Medical Care
2. Establish IV/IO access
3. Administer **EPINEPHRINE** 0.01mg/kg 1: 1,000 SQ/IM as indicated. Maximum 0.3 ml per single dose. May repeat every 15 minutes
4. For Bronchospasm not relieved by Epinephrine, administer **ALBUTEROL SULFATE**, 2.5mg in 3ml NS mixed with **IPRATROPIUM** 0.5mg via nebulizer
5. Administer **EPINEPHRINE** IV/IO 1:10,000 0.01mg/kg slowly. Repeat every 5 minutes as indicated
6. **DIPHENHYDRAMINE** IV/IO/IM 1mg/kg maximum 50mg
7. Administer a **LACTATED RINGERS** fluid bolus 20mg/kg. Repeat as needed maximum 60ml/kg
8. **METHYLPREDNISOLONE** 2mg/kg IV/IO maximum dose 125mg

NOTE:

- **Patients who have an allergic reaction can develop anaphylaxis over time. Monitor patients very closely.**
- **Avoid establishing an IV in the same extremity as a bee sting / allergy site.**
- **Both an allergic reaction & anaphylaxis can present with hives. Remember: an allergic reaction is localized while anaphylaxis is a systemic reaction.**
- **Do not waste time on scene – begin transport as soon as possible and treat en route.**

Asthma

EMR

1. Routine Medical Care
2. Position of comfort
3. Assist the pt. with prescribed inhaler
4. Reassess in 5 minutes and may assist the pt. with their prescribed inhaler if respiratory distress is still present.

BLS

1. Routine Medical Care
2. Position of comfort
3. Capnography if available
4. **Albuterol Sulfate** 2.5mg in 3ml normal saline
5. **Albuterol Sulfate** 2.5mg in 3ml normal saline may be repeated 2 additional times if respiratory distress is still noted.
6. If condition does not improve with albuterol, Epinephrine auto-injector 0 .15mg may be administered with MEDICAL CONTROL order.
    a. If approved for IM injections, administer 0.3 mg of **EPINEPHRINE** for children over 30kg. If child weighs less than 30kg, administer 0.15mg of **EPINEPHRINE** IM. MEDICAL CONTROL is needed for either dose. Use 1 inch 25-27g needle.

ILS

1. Routine Medical Care
2. Position of comfort
3. Capnography if available
4. **Albuterol Sulfate,** 2.5mg in 3ml normal saline
5. **Albuterol Sulfate**, 2.5mg in 3ml normal saline mixed with **Ipratropium** .5mg via nebulizer.
6. **Albuterol Sulfate** may be repeated 2 times if respiratory distress is still noted.
7. If conditions do not improve with albuterol, **Epinephrine** 0.01mg/kg 1: 1,000 SQ/IM as indicated. Maximum 0.3 ml per single dose.

ALS

1. Routine Medical Care
2. Position of comfort
3. Capnography if available
4. **Albuterol Sulfate** 2.5mg in 3ml normal saline
5. **Albuterol** Sulfate 2.5mg in 3ml normal saline mixed with **Ipratropium** .5mg via nebulizer.
6. **Albuterol Sulfate/Ipratropium** may be repeated 2 times if respiratory distress is still noted.
7. Initiate IV **LACTATED RINGERS** TKO (20ml/kg) or saline lock
8. **Methylprednisolone,** 2mg/kg IV/IO
9. **Magnesium Sulfate** 50mg/kg (max 2 grams) over 20 minutes
    a. 50mg=6.25ml when 250ml bag of 0.9% Normal Saline is used

b. Use medication pump if available

10. If conditions do not improve with albuterol, **Epinephrine** 1: 1,000 0.01mg/kg SQ/IM

Diabetic Emergency

EMR

1. Routine Medical Care
2. Obtain blood sugar
3. If blood sugar is less than 60mg/dl and pt. has an intact gag reflex and can swallow administer **ORAL GLUCOSE**. Check blood sugar after to ensure patients' blood sugar is in acceptable ranges

BLS

1. Routine Medical Care
2. Obtain blood sugar
3. If blood sugar is less than 60mg/dl and pt. has an intact gag reflex and can swallow administer **ORAL GLUCOSE**. Check blood sugar after to ensure patients' blood sugar is in acceptable ranges
4. **If no intact gag reflex administer Glucagon**
    a. **8 years of age or under 0.5 mg IN**
    b. **Greater than 8 years of age 1.0 mg IN**
5. Ensure ALS is en route

ILS

1. Routine Medical Care
2. Obtain blood sugar
3. If blood sugar is less than 60mg/dl and pt. has an intact gag reflex and can swallow administer **ORAL GLUCOSE**. Check blood sugar after to ensure patients' blood sugar is in acceptable ranges
4. Establish IV/IO
5. Administer **D10W** 5mL/kg. Max dose of 250mL.
6. **GLUCAGON** 0.1mg/kg IM if no IV/IO is established and patient is symptomatic
7. Blood sugar 60-250mg/dl maintain blood sugar and use appropriate protocol
8. Blood sugar greater than 250mg/dl. Dehydration with no evidence of CHF/fluid overload. **LACTATED RINGERS BOLUS** 20ml/kg. Repeat as needed to maintain age appropriate blood pressure max 60ml/kg

ALS

1. Routine Medical Care
2. Obtain blood sugar
3. If blood sugar is less than 60mg/dl and pt. has an intact gag reflex and can swallow administer **ORAL GLUCOSE**. Check blood sugar after to ensure patients' blood sugar is in acceptable ranges
4. Establish IV/IO
5. Administer **D10W** 5mL/kg. Max dose of 250mL
6. **GLUCAGON** 0.1mg/kg IM if no IV/IO is established and patient is symptomatic
7. Blood sugar 60-250mg/dl maintain blood sugar and use appropriate protocol

8. Blood sugar greater than 250mg/dl. Dehydration with no evidence of CHF/fluid overload. **LACTATED RINGERS BOLUS** 20ml/kg. Repeat as needed to maintain age appropriate blood pressure max 60ml/kg

Seizure

EMR

1. Routine Medical Care
2. Position the patient to protect from injury
3. Support ABC's
4. Vomiting and aspiration precautions
5. **Assess Blood Glucose**
6. If febrile seizure is suspected
    a. Assess Core Temperature
    b. Attempt to cool by removing excess clothing layers

BLS

1. Routine Medical Care
2. Position the patient to protect from injury
3. Support ABC's
4. Vomiting and aspiration precautions
5. **Assess Blood Glucose**
6. If febrile seizure is suspected
    a. Assess Core Temperature
    b. Attempt to cool by removing excess clothing layers

ILS

1. Routine Medical Care
2. Position the patient to protect from injury
3. Support ABC's
4. Vomiting and aspiration precautions
5. **Assess Blood Glucose**
6. If febrile seizure is suspected
    a. Assess Core Temperature
    b. Attempt to cool by removing excess clothing layers
7. Consider drug administration by alternate routes prior to establishing vascular access if still seizing.
8. **LORAZEPAM** 0.1mg/kg IV/IO/IM/IN (max dose 2.0mg)

    --**OR**--
9. **MIDAZOLAM** 0.1mg/kg IV/IO/IM (max dose 2.0 mg) or 0.2mg/kg IN (max dose 4.0 mg)

ALS

1. Routine Medical Care
2. Position the patient to protect from injury

3. Support ABC's
4. Vomiting and aspiration precautions
5. **Assess Blood Glucose**
6. If febrile seizure is suspected
    a. Assess Core Temperature
    b. Attempt to cool by removing excess clothing layers
7. Consider drug administration by alternate routes prior to establishing vascular access if still seizing.
8. **LORAZEPAM** 0.1mg/kg IV/IO/IM/IN (max dose 2.0mg)

    --**OR**--
9. **MIDAZOLAM** 0.1mg/kg IV/IO/IM (max dose 2.0mg) or 0.2mg/kg IN (max dose of 4.0 mg)

Notes:

- **<u>30% of all pediatric seizures are febrile in nature</u>. However, the presence of a fever may not necessarily be the cause of the seizure. The child needs to be transported to the hospital for further evaluation.**
- **Seizure activity usually indicates a serious underlying problem. Check the oxygenation and perfusion of the child along with the blood glucose level and temperature. Treat accordingly.**

Toxic Exposure/Poisoning

EMR

1. Routine Medical Care
2. Assess Blood Glucose, if less than 60 mg/dc refer to diabetic emergency protocol
3. If inadequate respirations / oxygenation/ ventilations and opioid ingestions suspected **NARCAN**
    a. <8 Years Old 0.5 mg IN
    b. >8 Years Old 1 mg IN

BLS

1. Routine Medical Care
2. Assess Blood Glucose, if less than 60 mg/dc refer to diabetic emergency protocol
3. If inadequate respirations / oxygenation/ ventilations and opioid ingestions suspected **NARCAN**
    a. <8 Years Old 0.5 mg IN
    b. >8 Years Old 1 mg IN
4. 12 Lead EKG

ILS

1. Routine Medical Care
2. Assess Blood Glucose, if less than 60 mg/dc refer to diabetic emergency protocol
3. If inadequate respirations / oxygenation/ ventilations **NARCAN 0.1 mg/kg** IV, IO, IM, IN. Titrated to restore adequate respirations NOT GIVEN TO RESTORE CONSCIOUSNESS
4. 12 Lead EKG
5. **Beta Blockers:** Glucagon 0.1mg/kg IM Maximum 2mg

ALS

1. Routine Medical Care
2. Assess Blood Glucose, if less than 60 mg/dc refer to diabetic emergency protocol
3. If inadequate respirations / oxygenation/ ventilations **NARCAN 0.1 mg/kg** IV, IO, IM, IN. Titrated to restore adequate respirations NOT GIVEN TO RESTORE CONSCIOUSNESS
4. 12 Lead EKG
5. **Beta Blockers:** Glucagon 0.1mg/kg IM Maximum 2mg
6. **Calcium Channel Blockers:** Calcium Chloride 20mg/kg IV/IO (max 1g)
    a. **If No improvement for severe/peri-arrest cases involving beta blockers calcium channel blockers: Epinephrine** 1:10,000 0.01mg/kg IV/IO (max 0.3mg)
    b. Consider External Pacing Procedures
7. **Tricyclic Antidepressant:** QRS ≥ 0.09 sec Sodium Bicarbonate 1 mEq/kg IV/IO max 50 mEq. Repeat every 5 minutes if QRS remains ≥ 0.09 seconds

NOTES:

ILLINOIS POISON CONTROL: 1 (800) 222-1222

Routine Trauma Care

EMR & BLS

1. Immobilize spine as indicated
2. Complete initial rapid trauma assessment including *Pediatric GCS*
3. Control any life-threatening airway obstruction (reposition, insert appropriate airway adjunct as needed, remove airway obstruction)
4. Control any major external bleeding consider need for quick clot or tourniquet
5. Administer **oxygen** by appropriate method if indicated.
6. Consider aeromedical services depending on extrication and injuries.
7. Reassess vitals every five (5) minutes if unstable and every fifteen (15) if stable.

ILS & ALS

1. Immobilize spine as indicated
2. Complete initial rapid trauma assessment including *Pediatric GCS*
3. Control any life-threatening airway obstruction (reposition, insert appropriate airway adjunct as needed, remove airway obstruction)
4. Control any major external bleeding consider need for quick clot or tourniquet
5. Administer **oxygen** by appropriate method if indicated.
6. Consider aeromedical services depending on extrication and injuries.
7. Reassess vitals every five (5) minutes if unstable and every fifteen (15) if stable.
8. Establish IV/IO
9. Consider **fluid bolus** of 20ml/kg of lactated ringers maximum 60ml/kg
10. Apply cardiac monitor
11. Apply capnography (if available)
12. Assess for any treatable causes of shock

Note:

- **Prompt transport with EARLY Medical Control contact & receiving hospital notification will expedite the care of the trauma patient.**
- **IVs should be established en route to the hospital thereby not delaying transport of critical trauma patients (unless scene time is extended due to prolonged extrication).**
- **Children are prone to hypothermia in traumatic situations – keep the patient warm!!!!**

Pain Control

EMR & BLS

1. Routine Trauma and/or Medical Care

ILS & ALS

1. Routine Trauma and/or Medical Care
2. Pain medication may be given without calling medical control if systolic blood pressure is greater than 90mmHg. If systolic blood pressure is less than 90mmHg, pain is described as "headache" in nature, head injury is present, acute neurological impairment, OR if the patient has any reported or observed diminished mentation not anticipated or appropriate for age, Contact MEDCIAL CONTROL prior to administering pain control.
3. **FENTANYL** 1.0 mcg/kg IV/IO over 2 minutes ***(Max single dose: 50mcg)*** – OR 2mcg/kg IN via MAD device ***(Max single dose: 100mcg)*** *Dose should be decreased by ½ if patient has a history of renal disease.*
4. For continued pain, **Fentanyl** IV/IO/IN may be repeated every 10 minutes up to a maximum cumulative dose of 100mcg IV/IO –**OR--** 200 mcg IN.

NOTES:

- If patient is allergic to a medication in the pain control protocol, do not administer that medication.
- Administration of Zofran is not routinely called for in pediatric patients in the pre-hospital environment Contact Medical Control prior to ANY administration of Zofran.
- Overall goal of pain management is for the patient to be pain free. If you administer the maximum dosage of medications under this protocol, contact medical control for further orders.
- ***Closely monitor patient's respiratory status. Continuous SpO2, cardiac monitoring, and capnography (if available) is required on patients receiving pain control medications.***

Pediatric Head Trauma

EMR

1. Routine Trauma Care

BLS

1. Routine Trauma Care
2. Obtain Blood Glucose – Treat as needed per *Diabetic Emergency Protocol*
3. ALS Intercept
4. Rapid Transport

ILS & ALS

1. Routine Trauma Care
2. Obtain Blood Glucose – Treat as needed per *Diabetic Emergency Protocol*
3. Initiate IV access
4. For hypotension **(SBP <70 + 2x age**) – Lactated Ringers bolus 20 ml/kg.
5. May repeat 2 times to 60 ml/kg With Medical Control Order
6. Consider Oral intubation (pGCS<8, airway compromise, difficult BVM ventilations)
7. Seizures – Treat as needed per *Pediatric Seizure Protocol*
8. Consider hyperventilation with BVM if impending signs of herniation are present. Use capnography if available to ventilate to a value of 35 mmHg.

Note: Decorticate or Decerebrate posturing, Unequal or blown pupils, ALOC, and Cushing's Triad (Increased B/P, Decreased Pulse, and Irreg. respirations) are all signs of impending / active herniation.

Burns

EMR & BLS

1. Routine trauma care
2. Remove any rings, bracelets, or constricting items
3. Obtain burn history
    a. Type of burn, causative agent, time of burn
    b. Location of burn, injury environment
    c. Estimate the percent of surface area burned
4. Assess and treat burn according to type:
    a. Superficial thermal burn: cool with sterile water or saline then cover with moist sterile dressings.
    b. Partial and full thickness thermal burns: Cover with dry sterile dressings.
    c. Chemical burns: Flush with water or saline (brush off dry chemicals first)
    d. Electrical burns: Note any secondary fractures or exit wounds caused by the current.

ILS

1. Routine trauma care
2. Remove any rings, bracelets, or constricting items
3. Obtain burn history
    a. Type of burn, causative agent, time of burn
    b. Location of burn, injury environment
    c. Estimate the percent of surface area burned
4. Assess and treat burn according to type:
    a. Superficial thermal burn: cool with sterile water or saline then cover with moist sterile dressings.
    b. Partial and full thickness thermal burns: Cover with dry sterile dressings.
    c. Chemical burns: Flush with water or saline (brush off dry chemicals first)
    d. Electrical burns: Note any secondary fractures or exit wounds caused by the current.
5. Initiate IV consider IO if indicated
6. **Lactated Ringers** 0.25ml / kg (x % TBSA) /hr.
7. Consider intubation
8. Consider using a buretrol set if equipped
9. Cardiac monitor
10. Capnography if available
11. Consider pain management utilizing pain control protocol

ALS

1. Routine trauma care
2. Remove any rings, bracelets, or constricting items
3. Obtain burn history
    a. Type of burn, causative agent, time of burn
    b. Location of burn, injury environment
    c. Estimate the percent of surface area burned
4. Assess and treat burn according to type:
    a. Superficial thermal burn: cool with sterile water or saline then cover with moist sterile dressings.
    b. Partial and full thickness thermal burns: Cover with dry sterile dressings.
    c. Chemical burns: Flush with water or saline (brush off dry chemicals first)
    d. Electrical burns: Note any secondary fractures or exit wounds caused by the current.
5. Initiate IV consider IO if indicated
6. **Lactated Ringers** 0.25ml / kg (x % TBSA) /hr.
7. Consider intubation
8. Consider using a buretrol set if available
9. Cardiac monitor
10. Capnography if available
11. Consider pain management utilizing pain control protocol

NOTES:

- Avoid giving IM medications
- Early intubation is required for significant inhalation burns

Hypothermia

EMR

1. Place in warm environment
2. Remove wet clothing
3. Prevent further heat loss with blankets and drying of the patient
4. Handle gently, rough handling may cause cardiac arrest
5. Place heat packs to axilla and groin
    a. Avoid direct skin contact to prevent burns
6. If no pulse begin CPR and refer to General Cardiac Arrest Protocol
    a. Limit defibrillations to three (3)

BLS

1. Place in warm environment
2. Remove wet clothing
3. Prevent further heat loss with blankets and drying of the patient
4. Handle gently, rough handling may cause cardiac arrest
5. Place heat packs to axilla and groin
    a. Avoid direct skin contact to prevent burns
6. If no pulse begin CPR and refer to General Cardiac Arrest Protocol
    a. Limit defibrillations to three (3)
7. ALS intercept

ILS

1. Place in warm environment
2. Remove wet clothing
3. Prevent further heat loss with blankets and drying of the patient
4. Handle gently, rough handling may cause cardiac arrest
5. Place heat packs to axilla and groin
    a. Avoid direct skin contact to prevent burns
6. If no pulse begin CPR and refer to General Cardiac Arrest Protocol
    a. Limit defibrillations to three (3)
7. Consider ALS intercept
8. Establish IV/IO access
9. Administer warm **Lactated Ringers** fluid bolus of 20 ml/kg if available
10. Refer to other protocols such as dysrhythmia or seizure as needed
11. If no pulse begin CPR and refer to appropriate Cardiac Arrest algorithm
    a. Limit defibrillations to three (3)

ALS

1. Place in warm environment
2. Remove wet clothing
3. Prevent further heat loss with blankets and drying of the patient
4. Handle gently, rough handling may cause cardiac arrest
5. Place heat packs to axilla and groin
    a. Avoid direct skin contact to prevent burns
6. If no pulse begin CPR and refer to General Cardiac Arrest Protocol
    a. Limit defibrillations to three (3)
7. Establish IV/IO access
8. Administer warm **Lactated Ringers** fluid bolus of 20 ml/kg if available
9. Refer to other protocols such as dysrhythmia or seizure as needed
10. If no pulse begin CPR and refer to appropriate Cardiac Arrest algorithm
    a. Limit defibrillations to three (3)

Heat Related Emergencies

EMR

1. Routine Medical Care.
2. Move to cool environment.
3. Cool patient (place cold packs on central pulse points).
4. If patient is hypotensive, place in Trendelenburg position.
5. Do not massage cramping muscle.
6. If heat stroke is not suspected and patient is not nauseated, give 1 glass of electrolyte containing solution (i.e. Gatorade), if available.

BLS

1. Routine Medical Care.
2. Move to cool environment.
3. Cool patient (place cold packs on central pulse points).
4. If patient is hypotensive, place in Trendelenburg position.
5. Do not massage cramping muscle.
6. Perform 12-lead ECG and transmit to receiving facility.
7. If heat stroke is not suspected and patient is not nauseated, give 1 glass of electrolyte containing solution (i.e. Gatorade), if available.

ILS & ALS

1. Routine Medical Care.
2. Move to cool environment.
3. Cool patient (place cold packs on central pulse points).
4. If patient is hypotensive, place in Trendelenburg position.
5. Do not massage cramping muscle.
6. If heat stroke is not suspected and patient is not nauseated, give 1 glass of electrolyte containing solution (i.e. Gatorade), if available.
7. Continuous cardiac monitoring.
8. Initiate IV TKO of **Lactated Ringers**. Give 20 ml/kg bolus for dehydration or hypovolemia.

NOTE:

- For patients with severe hyperthermia, consider active cooling with ice water immersion or application (if possible and patient does not have any ABC compromise)
- Consider application of cold wet towels around the body

Near Drowning

EMR

1. Routine Trauma Care
2. Immobilize if indicated
3. Ensure adequate ventilations and respiratory effort
4. If inadequate ventilations or respiratory effort refer to respiratory distress protocol
5. Suction as needed
6. Remove wet clothing
7. Prevent further heat loss
8. Warm the patient as needed
9. Refer to the Cardiac Arrest Protocol as indicated

BLS

1. Routine Trauma Care
2. Immobilize if indicated
3. Ensure adequate ventilations and respiratory effort
4. If inadequate ventilations or respiratory effort refer to respiratory distress protocol
5. Suction as needed
6. Remove wet clothing
7. Prevent further heat loss
8. Warm the patient as needed
9. Refer to the Cardiac Arrest Protocol as indicated
10. Activate ALS Intercept
11. 12 lead EKG

ILS & ALS

1. Routine Trauma Care
2. Immobilize if indicated
3. Ensure adequate ventilations and respiratory effort
4. If inadequate ventilations or respiratory effort refer to respiratory distress protocol
5. Suction as needed
6. Remove wet clothing
7. Prevent further heat loss
8. Warm the patient as needed
9. Refer to the Cardiac Arrest Protocol as indicated
10. 12 lead EKG
11. Capnography if available
12. Cardiac Monitor
13. 12 lead EKG
14. Establish IV/IO
15. Consider **Lactated Ringers** fluid bolus of 20ml/kg, maximum 60ml/kg
16. Consider Intubation if indicated

Suspected Child Abuse Protocol

Illinois state law mandates that EMS providers report any suspicious acts of suspected maltreatment. There is no profile of the "typical" family in which abuse is taking place. Maltreatment of children affects all socio-economic classes. As EMS professionals, we need to be aware of the warning signs, treat the injuries of the child and report accordingly.

EMR/BLS/ILS/ALS:

1. Consider scene safety issues:
    a) If the offender is present and interferes with transportation of the patient, or is influencing the patient's acceptance of medical care, contact law enforcement and Medical Control for consultation on the appropriate action to take.
    b) If the parent/guardian refuses to allow transportation of the child, contact law enforcement and Medical Control for consultation on the appropriate action to take.
2. Render initial care in accordance with the *Routine Pediatric Care Protocol*.
3. Treat obvious injuries or illnesses.
4. After the scene is safe, assess the environment for factors that may affect patient outcome:
    a) Environmental
    b) Interaction with parents/guardians
    c) Discrepancies in the history of events
    d) Injury patterns inconsistent with history of events or anticipated motor skills based on the child's growth and development stage.
    e) Signs of intentional injury or emotional harm.
5. **Upon arrival at the ED, notify the receiving physician or nurse of the suspected maltreatment/abuse. Remember – healthcare workers (including EMS) are mandated by Illinois state law to report cases of suspected abuse or neglect to the Department of Children and Family Services (DCFS) by calling 1-800-252-2873**.
6. Thoroughly document the child's history & physical exam findings.

Note:

- **Do not make accusations on the PCR. Document objective physical findings, not opinion.**
- **A copy of the *Manual for Mandated Reporters* can be downloaded at www.state.il.us/dcfs.**
- **Willful failure to report suspected incidents of child abuse/neglect is a misdemeanor (1st violation) or a class 4 felony (2nd or subsequent violations).**
- **Reports must be confirmed in writing to the local investigation unit within 48 hours of the Hotline call.**

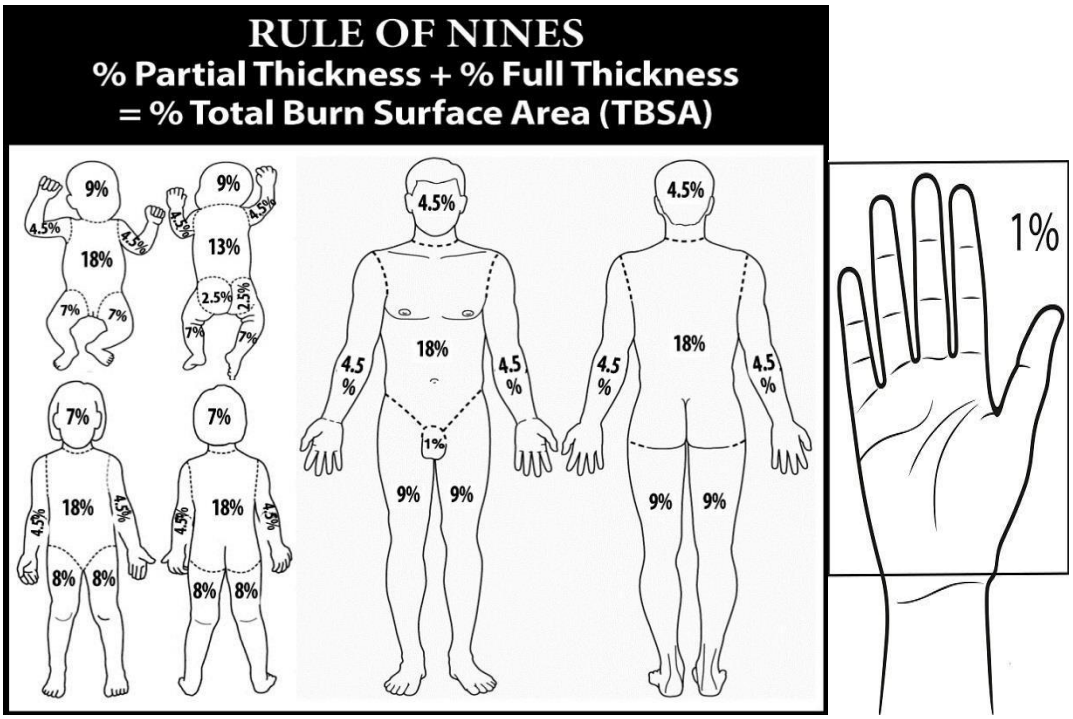
Vital Sign/Age Parameters

Age	Pulse	Systolic Blood Pressure	Respiratory Rate
Newborn	100 - 180	>60	30 - 60
3 months	100 - 160	>70	30 - 60
6 months	110 - 160	>70	30 - 60
9 months	110 - 160	>70	30 - 60
12 months	110 - 160	>70	30 - 60
2 years	90 - 150	>70	24 – 40
4 years	90 - 150	>75	22 – 34
6 years	70 - 120	>80	18 – 30
8 years	70 – 120	>80	18 – 30
10 years	70 - 120	>80	18 – 30
12 years	60 - 110	>90	12 - 16

Indicators of Cardiopulmonary Compromise in Children

- Weak, thready, or absent peripheral pulses
- Decreasing consciousness
- Tachypnea/Respiratory difficulty
- Central cyanosis and coolness
- Hypotension (late sign)

%BSA by anatomical area **Palm-and-hand calculation[a]**



[a] Palm of hand (including fingers) of infant or child = 1% of the total body surface

Burn Center Referral Criteria

Any patient with a life threatening condition should be treated until stable at the nearest appropriate facility before being transferred to a burn center. According to the American Burn Association, burn injuries that should be referred to a burn center include:

1. Partial thickness burns greater than 10% total body surface area (TBSA)
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints
3. Third-degree burns in any age group
4. Electrical burns, including lightning injury
5. Chemical burns
6. Inhalation injury
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality
8. Any patients with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols
9. Burned children in hospitals without qualified personnel or equipment for the care of children
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention

Pediatric GCS

PEDIATRIC GLASGOW COMA SCALE (PGCS)				
	> 1 Year		**< 1 Year**	**Score**
EYE OPENING	Spontaneously		Spontaneously	4
	To verbal command		To shout	3
	To pain		To pain	2
	No response		No response	1
MOTOR RESPONSE	Obeys		Spontaneous	6
	Localizes pain		Localizes pain	5
	Flexion-withdrawal		Flexion-withdrawal	4
	Flexion-abnormal (decorticate rigidity)		Flexion-abnormal (decorticate rigidity)	3
	Extension (decerebrate rigidity)		Extension (decerebrate rigidity)	2
	No response		No response	1
	> 5 Years	**2-5 Years**	**0-23 months**	
VERBAL RESPONSE	Oriented	Appropriate words/phrases	Smiles/coos appropriately	5
	Disoriented/confused	Inappropriate words	Cries and is consolable	4
	Inappropriate words	Persistent cries and screams	Persistent inappropriate crying and/or screaming	3
	Incomprehensible sounds	Grunts	Grunts, agitated, and restless	2
	No response	No response	No response	1
TOTAL PEDIATRIC GLASGOW COMA SCORE:				**(3-15)**

Left Blank for additional notes