A. CPR Guidelines

CPR will be performed according to the most current American Heart Association (AHA) standards. Always keep in mind that high quality CPR with uninterrupted chest compressions is the top priority when attempting to resuscitate a pulseless and apneic patient. When performing CPR, the following guidelines will be adhered to:

1. Check for responsiveness, looking for no breathing or occasional gasps and simultaneously checking for a pulse.

2. If no pulse, perform chest compressions approximately 1-1/2” (4 cm) in infants, 2” (5 cm) deep in children and at a rate of 100 to 120/min.

3. Allow for full chest recoil after each chest compression by not leaning on the chest.

4. MINIMIZE INTERRUPTIONS in chest compressions.

5. Avoid excessive ventilation:
   a) When ventilating without an advanced airway with a single rescuer, perform cycles of 30 compressions with a short pause to administer 2 breaths per cycle.
   b) When ventilating without an advanced airway with two rescuers, perform cycles of 15 compressions with a short pause to administer 2 breaths per cycle.
   c) When an advanced airway is in place, provide continuous compressions at a rate of at least 100 to 120/min and ventilate the patient once every 6 seconds.

6. High quality chest compressions are achieved when the ETCO2 value is at least 10-20 mmHg.

All cardiac arrests will be worked for at least 20 minutes on scene prior to the transportation of the patient to definitive care.
B. Pediatric Cardiopulmonary Resuscitation

BLS

1. Initial Assessment/Care Protocol 1P.
   a) Assess for responsiveness.
   b) Simultaneously look for no breathing or occasional gasps and check for a pulse, in an effort to reduce the time to first chest compression.

   Note: This assessment should take no more than 10 seconds to complete.

2. If the patient has a pulse but is not breathing:
   a) Open the airway
      a. Infants – Head positioned to a neutral, snifing position, DO NOT hyperextend the neck.
      b. Child – Head-tilt/chin lift
   b) Provide rescue breaths once every 3-5 seconds using a BVM. Reassess for a pulse every 2 minutes.

3. If the patient has no pulse:
   a) Initiate CPR according to American Heart Association Standards, 30 compressions and 2 ventilations for 5 cycles of CPR.
   b) When the second rescuer is available, begin 15 compressions and 2 ventilations for 10 cycles of CPR.

4. If AED is available, place device on patient using pediatric appropriate attachments. If no pediatric attachments are available, use adult size pads. Consider anterior/posterior placement of the adult pads.

5. Follow AED procedures:
   a) Allow the AED to analyze the patient’s rhythm and shock as needed.
   b) Leave the AED on the patient and turned on throughout the resuscitation effort.
   c) The AED will prompt reassessment of a pulse and rhythm analysis every 2 minutes.
   d) If a shock is advised, minimize interruptions in chest compressions before and after shock.
   e) Resume CPR beginning with chest compressions immediately after each shock.
Note: The priority in cardiac arrest is circulation with minimal interruptions to CPR. “Push hard, push fast” with compressions at a rate of 100-120/minute. Continuous uninterrupted compressions are the utmost importance for patient survival.

**ALS**

6. Initiate appropriate advanced airway procedures - Airway Management [Protocol 7P](#).

7. Attach and turn on the **Monitor / Defibrillator**.
   a) Apply the defibrillator pads and switch the monitor to “paddles.”
   b) Analyze for a **shockable rhythm** after 2 minutes of compressions have been delivered.
   c) If the patient presents with a shockable rhythm:
      a. Defibrillate at **2 J/kg** and subsequent defibrillations should escalate beginning at **4 J/kg every 2 minutes as needed**, up to **MAX dose** of **10 J/kg (or adult dose)** every 2 minutes.
      b. **Resume CPR** beginning with chest compressions immediately after each shock,
         1. 15 compressions 2 breaths for 10 cycles (2 minutes) if no advanced airway in place.
         2. Once an advanced airway is in place, ventilate 1 breath every 6 seconds with continuous chest compressions (2 minutes).
      d) If the patient does not present with a shockable rhythm: **Resume CPR** beginning with chest compressions after each reassessment.
      e) Reassessment shall be done after every 2 minutes of CPR, simultaneously checking for a pulse and confirming the underlying rhythm.

7. **Establish vascular access via IV or IO** as soon as possible without delaying chest compressions. [Procedure 13](#) or [Procedure 14](#).
   a) Deliver medications in accordance with the rhythm based protocol the patient is being treated under the proceeding sections in this protocol.

8. Attach and monitor **End Tidal CO₂** and waveform capnography [Procedure 11](#).
Pulseless Unresponsive Child – BLS Provider with AED

Initial Assessment
Unresponsive?
Not breathing or only gasping?
Request for resources, obtain an AED/defibrillator

Abnormal or not breathing
WITH pulse
Provide rescue breathing:
• Give 1 breath every 3-5 secs
• Add compressions if pulse remains ≤ 60/min with poor perfusion despite adequate oxygenation and ventilation
• Check pulse every 2 minutes

Look for signs of breathing or occasional gasps, simultaneously checking for a pulse within 10 seconds?

No breathing or only gasping, NO pulse

CPR
One rescuer:
Begin cycles of 30:2 compressions to breaths
Two Rescuers:
Begin cycles of 15:2 compressions to breaths

After 2 minutes of CPR, apply AED/Defibrillator (if not already done)
Analyze rhythm for a shockable rhythm

Shockable rhythm?

Yes
Give 1 shock
Resume CPR Immediately
Reassess every 2 minutes when prompted by AED. Continue until transferred over to ALS.

No
Resume CPR immediately for 2 minutes.
Check rhythm every 2 minutes. Continue until transferred over to ALS or until patient becomes responsive.

High Quality CPR
• Compress at a rate of at least 100-120/min
• Compression depth at least 1/3 anterior-posterior diameter of the chest, about 1½ inches (4 cm) in infants and 2 inches (5 cm) in children.
• Allow complete chest recoil after each compression.
• Minimize interruptions in chest compressions
• Avoid excessive ventilation
C. Ventricular Fibrillation/Pulseless Ventricular Tachycardia

ALS

1. For a patient with an unwitnessed onset of V-Fib or Pulseless V-Tach, initiate CPR for 2 minutes.

2. **Defibrillate at 2 J/kg** and subsequent defibrillations should escalate beginning at **4 J/kg up to MAX dose of 10 J/kg (or adult dose)** every 2 minutes. **Continue CPR** for a minimum of two minutes. Then re-assess ECG Rhythm. If patient remains in V-Fib or Pulseless V-Tach:

3. **Defibrillate at 4 J/kg**, if rhythm shockable. Resume CPR.

4. Administer **Epinephrine (1:10,000), 0.01 mg/kg**, (0.1 mL/kg) IV/IO push. Circulate with 2 minutes of CPR.

5. **Defibrillate at 6 J/kg**, if rhythm shockable. Resume CPR.

6. Administer **Amiodarone, 5 mg/kg**, IV/IO push. Circulate with 2 minutes of CPR.

7. **Defibrillate at 8 J/kg**, if rhythm shockable. Resume CPR.

8. Administer **Epinephrine (1:10,000), 0.01 mg/kg**, (0.1 mL/kg) IV/IO push. Circulate with 2 minutes of CPR.

9. **Defibrillate at 10 J/kg**, if rhythm shockable. Resume CPR.

10. Administer **Amiodarone, 5 mg/kg**, IV/IO push. Circulate with 2 minutes of CPR.

11. **Defibrillate at 10 J/kg**, if rhythm shockable. Resume CPR.

12. Administer **Epinephrine (1:10,000), 0.01 mg/kg**, (0.1 mL/kg) IV/IO push. Circulate with 2 minutes of CPR.

13. **Defibrillate at 10 J/kg**, if rhythm shockable. Resume CPR.

14. Administer **Amiodarone, 5 mg/kg**, IV/IO push. Circulate with 2 minutes of CPR.

15. **Defibrillate at 10 J/kg**. Resume CPR immediately after shock.

16. Administer **Epinephrine (1:10,000), 0.01 mg/kg**, (0.1 mL/kg) IV/IO push. Circulate with 2 minutes of CPR.

17. **Defibrillate at 10 J/kg**. Resume CPR immediately after shock.

18. Administer **Magnesium Sulfate 25-50 mg/kg IV/IO (Max dose of 2 gm)** over 2 min. If patient is in polymorphic ventricular tachycardia (Torsades de Pointes) or refractory V-Fib (can be done at any time after the first epinephrine).

19. Consider underlying causes and manage as soon as possible. indicated in “Potentially Reversible Causes in Cardiac Arrest” at the end of **Section H**, PEA.

20. After ROSC, refer to the Post Resuscitative Care Protocol **Section J**.
Ventricular Fibrillation / Pulseless Ventricular Tachycardia

If pulses are restored (ROSC), refer to the Post Resuscitative Care Protocol Section J.
D. Wide Complex Tachycardia – Regular (Monomorphic) with a Pulse

Infants: Rate ≥ 220/min./Children: Rate ≥ 180/min.

Wide Complex Tachycardia - Stable Patient

**BLS**

1. Initial Assessment/Care Protocol 1P.
2. Provide oxygen.

**ALS**

3. Obtain EKG and determine regularity of R-R waves.
4. Consider Adenosine 0.1 mg/kg rapid IVP (max dose 6 mg) if rhythm is regular and QRS complexes are monomorphic as a diagnostic tool.
5. Administer Amiodarone 5 mg/kg IV over 20 minutes.
6. If the patient's condition deteriorates at anytime, move immediately to "unstable pediatric patient" below or to VF/Pulseless VT, Section C.

Wide Complex Tachycardia - Unstable Patient

Regular, Wide Complex (QRS > 0.09 sec) Tachycardia with a Pulse.

“Unstable” includes patients presenting with ANY of the following signs related to the wide complex tachycardia:

- a. Chest pain/discomfort
- b. Acutely altered mental status
- c. Shortness of breath
- d. Hypotension

**BLS**

1. Initial Assessment/Care Protocol 1P.
2. Provide oxygen.
ALS

3. Obtain EKG and determine regularity of R-R waves.

4. If conscious, attempt to sedate by administering Midazolam (Versed), 0.1 mg/kg slow IV/IO or IM. DO NOT delay cardioversion to sedate patient and obtain a 12-Lead EKG if they are unstable.

5. Begin synchronized cardioversion at 0.5 J/kg. (If impossible to synchronize, defibrillate as in Section C. Ventricular Fibrillation/Pulseless Ventricular Tachycardia Pediatric). If patient does not convert after initial cardioversion of 0.5 J/kg and reassessment of underlying rhythm and the presence of a pulse each energy delivery, increase doses:
   a. 1 J/kg Synchronized
   b. 2 J/kg Synchronized

6. Consider Adenosine 0.1 mg/kg rapid IVP (Max dose of 6 mg) as a diagnostic tool, if rhythm is regular and the QRS are monomorphic.

7. If the patient's condition deteriorates at any time and becomes unresponsive and pulseless, move immediately to VF/Pulseless VT, Section C.

E. Torsades de Pointes – Irregular (Polymorphic) VT

Polymorphic (irregular) VT requires immediate defibrillation with the same protocol for VF. For polymorphic VTs, due to the QRS complex appearance, it will be virtually impossible for cardiac monitors for synchronization. Although some patients may present with a pulse, it typically will deteriorate quickly to a pulseless VT.

Torsades de Pointes – Irregular (Polymorphic) VT – Stable Patient

Infants: Rate ≥ 220/min./Children: Rate ≥ 180/min

BLS

1. Initial Assessment/Care Protocol 1P.

2. Provide oxygen.

ALS

3. Obtain EKG and determine regularity of R-R waves.

4. Administer Magnesium Sulfate 25-50 mg/kg (MAX 2 gm) mixed into a 50 mL of NS over 8-9 minutes with a 10 gtt (macro) drip set at 1 drop/second.

5. If the patient's condition deteriorates at any time, move immediately to "Unstable Patient" below, or go to VF/Pulseless VT, Section C.
Torsades de Pointes – Irregular (Polymorphic) VT - Unstable Patient

Irregular, Wide Complex (QRS > 0.09 sec) Tachycardia.

“Unstable” includes patients presenting with ANY of the following signs related to the wide complex tachycardia:

a. Chest pain/discomfort
b. Acutely altered mental status
c. Shortness of breath
d. Hypotension

**BLS**

1. Initial Assessment/Care Protocol 1P.
2. Provide oxygen.

**ALS**

3. Obtain EKG and determine regularity of R-R waves.
4. If conscious, attempt to sedate by administering Midazolam (Versed), 0.1 mg/kg slow IV/IO or IM. **DO NOT** delay cardioversion to sedate patient and obtain a 12-Lead EKG if they are unstable.
5. Begin Defibrillation at 2 J/kg. (Defibrillate as in Section C, Ventricular Fibrillation/Pulseless Ventricular Tachycardia Pediatric). If patient does not convert after initial defibrillation of 2 J/kg and reassessment of underlying rhythm and the presence of a pulse each energy delivery, increase doses:
   a. 4 J/kg
   b. 6 J/kg up to 10 J/kg
6. If the patient's condition deteriorates at any time and becomes unresponsive and pulseless, move immediately to VF/Pulseless VT, **Section C**.
7. Regardless of the cause, consider treatment of Torsades de Pointes early, administer **Magnesium Sulfate 25-50 mg/kg** (MAX 2 gm) IV/IO.
F. Sustained Narrow Complex Tachycardia

Sustained Sinus Tachycardia – Stable Patient

Infants: Rate < 220/min./Children: Rate < 180/min.

Sinus tachycardia is usually greater than the normal rate, but the rate may vary. Upon acquiring history, it is compatible and consistent with known cause; P waves are present and normal, variable R-R with a constant PR interval.

**BLS**

1. Initial Assessment/Care [Protocol 1P](#).
2. Provide oxygen.

**ALS**

3. Obtain EKG and determine **regularity of R-R waves**.
4. Consider underlying causes of tachycardia, probable sinus tachycardia.
   a) Refer to Handtevy system as a guide for appropriate pediatric vital signs.
   b) Seek for and treat the underlying cause. ([Examples of causes](#): hyperthermia, dehydration, etc.)
   c) Contact MCP for consultation.

SVT - Stable Patient

Regular, Narrow Complex (QRS ≤ 0.09 sec)

Infants: Rate ≥ 220/min./Children: Rate ≥ 180/min.

Pediatric patient with a history of abrupt rate change, P waves are absent and/or abnormal, HR is not variable with activity.

**BLS**

1. Initial Assessment/Care [Protocol 1P](#).
2. Provide oxygen.

**ALS**

3. Obtain EKG and determine **regularity of R-R waves**.
4. Consider underlying causes of tachycardia.
a) Refer to Handtevy system as a guide for appropriate pediatric vital signs.

5. Consider vagal maneuvers.

6. Administer Adenosine, 0.1 mg/kg rapid IVP (Max first dose of 6 mg). This may be repeated in 1-2 minutes at 0.2 mg/kg rapid IVP (Max second dose of 12 mg).

   a) Adenosine should be administered through a large-bore catheter preferably at the antecubital fossa and followed by a rapid flush of 5-10 mL of IV solution.

7. If the QRS width is thought to be wide (> 0.09 sec) then follow Section D, “Regular, Wide Complex Tachycardia with a Pulse” Pediatric).

8. If the patient’s condition deteriorates at any time, move immediately to "unstable patient" below.

### SVT - Unstable Patient

Regular, Narrow Complex (QRS ≤ 0.09 sec)

Infants: Rate ≥ 220/min./Children: Rate ≥ 180/min.

Patient presents with vague/nonspecific history of abrupt rate changes, P waves absent and/or abnormal, HR is not variable with activity.

“Unstable” includes patients presenting with any of the following signs related to the wide complex tachycardia:

a. Chest pain/discomfort

b. Acutely altered mental status

c. Shortness of breath

d. Hypotension

**BLS**

1. Initial Assessment/Care Protocol 1P.

2. Provide oxygen.

**ALS**

3. Obtain EKG and determine regularity of R-R waves.
4. If conscious, attempt to sedate by administering **Midazolam (Versed) 0.1 mg/kg slow IV/IO or IM.**

5. Begin **synchronized cardioversion at 0.5 J/kg**. (If impossible to synchronize, defibrillate as in **Section C. Ventricular Fibrillation /Pulseless Ventricular Tachycardia Pediatric**). If patient does not convert after initial cardioversion of 0.5 J/kg and reassessment of underlying rhythm and the presence of a pulse each energy delivery, increase doses:

   a) **1 J/kg** Synchronized

   b) **2 J/kg** Synchronized

6. Administer **Adenosine, 0.1 mg/kg rapid IVP** (Max dose of 6 mg).

7. Administer a **fluid challenge of 20 mL/kg**.

8. If the patient's rhythm fails to convert, consult MCP for further treatment instructions.
Pediatric Tachycardia

Initial Assessment
Identify and Treat Underlying Cause
- Maintain patent airway; assist breathing as necessary
- Administer Oxygen
- Apply Cardiac Monitor to identify rhythm; monitor blood pressure and SAO₂
- IV/IO Access
- Perform 12-Lead ECG if available; but don’t delay therapy

Patient Stable?

STABLE

Check Rhythm

NARROW

Probable supraventricular tachycardia
- Vagal Maneuvers
  - Adenosine 0.1 mg/kg
  - Amiodarone 5 mg/kg over 20 minutes
  - Seek Expert consultation

WIDE

Probable ventricular tachycardia
- Consider Adenosine 0.1 mg/kg; if the QRS is regular and monomorphic
- Amiodarone 5 mg/kg over 20 minutes
- Seek Expert consultation

Probable sinus tachycardia
- Search for cause; Treat signs and symptoms as indicated
- Adenosine 0.1 mg/kg
- Fluid Challenge 20 mL/kg
- Seek Expert consultation

UNSTABLE

Synchronized Cardioversion
- Sedate with Versed if time allows
- Adenosine 0.1 mg/kg
- Fluid Challenge 20 mL/kg
- Seek Expert consultation
G. Asystole, Agonal rhythm, Idioventricular with rate \( \leq 20 \) bpm or Pulseless Bradycardias

If heart rate is \(< 60/\text{min.}\) in an infant or child, along with poor systemic perfusion, begin chest compressions.

**ALS**

1. Initiate CPR according to AHA standards. Two minutes of CPR will be done prior to stopping and assessing the rhythm.

2. Airway Management Protocol 7P.

3. IV/IO Access Procedure 13 & Procedure 14 will be done concurrently with CPR. Medication administration will begin as soon as an appropriate route becomes available.

4. Administer **Epinephrine 1:10,000, 0.01 mg/kg** IV/IO (0.1 mL/kg), MAX DOSE of 1 mg.
   a. Subsequent doses of **Epinephrine 1:10,000 0.01 mg/kg** IV/IO (0.1 mL/kg) should be administered every 3-5 minutes, MAX 1 mg per dose.

5. Consider underlying causes and manage as soon as possible, indicated in “Potentially Reversible Causes in Cardiac Arrest” at end of Section H., PEA.

H. Pulseless Electrical Activity (PEA)

**ALS**

1. Initiate CPR according to AHA standards. Two minutes of CPR will be done prior to stopping and assessing the rhythm.

2. Airway Management Protocol 7P.

3. IV/IO Access Procedure 13 & Procedure 14 will be done concurrently with CPR. Medication administration will begin as soon as an appropriate route becomes available.

4. Administer **Epinephrine 1:10,000 0.01 mg/kg** IV/IO (0.1 mL/kg) MAX DOSE 1 mg.
   a) Subsequent doses of **Epinephrine 1:10,000 0.01 mg/kg** IV/IO (0.1 mL/kg) should be administered every 3-5 minutes.

5. Consider causes and manage as soon as possible, indicated in the following chart, “Potentially Reversible Causes in Cardiac Arrest.”
## Potentially Reversible Causes in Cardiac Arrest

<table>
<thead>
<tr>
<th>Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hypovolemia</strong></td>
<td>Fluid bolus of 20 mL/kg; 10 mL/kg for neonates (&lt; 1 month), rapid transport</td>
</tr>
<tr>
<td><strong>Hypoxemia</strong></td>
<td>Confirm adequacy of oxygenation, airway management, consider establishing advanced airway.</td>
</tr>
<tr>
<td><strong>Hydrogen-ion (Acidosis)</strong></td>
<td>Give Sodium Bicarbonate, 1 mEq/kg IV/IO, airway management, consider advanced airway.</td>
</tr>
<tr>
<td><strong>Hypothermia</strong></td>
<td>Active rewarming of patient</td>
</tr>
<tr>
<td><strong>Hypoglycemia</strong></td>
<td>Treat per Protocol 36P, Impaired Consciousness</td>
</tr>
<tr>
<td><strong>Hyperkalemia</strong></td>
<td>Calcium Chloride and/or Sodium Bicarbonate.</td>
</tr>
<tr>
<td><strong>Tension Pneumothorax</strong></td>
<td>Needle decompression per Procedure 5</td>
</tr>
<tr>
<td><strong>Cardiac Tamponade</strong></td>
<td></td>
</tr>
<tr>
<td><strong>(Toxin): Beta Blocker OD</strong></td>
<td><em>Poison Control:</em> Glucagon IVP. Dosage per MCP.</td>
</tr>
<tr>
<td><strong>(Toxin): Calcium Channel Blocker OD</strong></td>
<td><em>Poison Control:</em> Calcium Chloride and/or Glucagon IVP. Dosage per MCP.</td>
</tr>
<tr>
<td><strong>(Toxin): Suspected Narcotic OD</strong></td>
<td>Narcan, 0.5 mg IV/IO/IN per dose as needed.</td>
</tr>
<tr>
<td><strong>Thrombosis</strong></td>
<td>Coronary: Consider 12-Lead ECG; Pulmonary Embolism</td>
</tr>
<tr>
<td><strong>Trauma</strong></td>
<td></td>
</tr>
</tbody>
</table>
I. Symptomatic Bradycardia

Causes of bradycardia in the pediatric population is may be caused by hypoxemia, heart block, heart defects, hypothermia, head injury, and/or toxin/drug induced.

Care must be taken to ensure the adequacy of oxygenation and airway patency. Hypoxemia is the leading cause of bradycardia in children. If heart rate is ≤ 60/min. in an infant or child, along with poor systemic perfusion, begin chest compressions.

ALS

1. Initial Assessment/Care Protocol 1P.
2. Begin assisting ventilations and oxygenate patient via BVM if HR < 100, reassess every 2 min.
3. Initiate CPR according to AHA standards Section A if patient’s heart rate ≤ 60 or despite of assistance of ventilations & oxygenation.

Two minutes of CPR will be done prior to stopping and assessing the rhythm. Airway Management Protocol 7P and IV/IO Access Procedure 13 & Procedure 14 will be done concurrently with CPR. Medication administration will begin as soon as an appropriate route becomes available.

4. Administer Epinephrine (1:10,000) 0.01 mg/kg IV/IO (0.1 mL/kg). For ET use 1:1,000, 0.1 mg/kg. May be repeated every 3-5 min. (No max dose)

5. Administer Atropine, 0.02 mg/kg IV/IO. 0.1 mg is the minimum single dose (0.5 mg is maximum single dose), for increased vagal tone or primary AV block, may be repeated once in 3-5 min. (not to exceed a maximum dose of 0.04 mg/kg)

6. Consider causes and manage as indicated in the following chart, “Potentially Reversible Causes in Cardiac Arrest.”

MCP

7. Epinephrine infusion.
8. Dopamine infusion.
9. External pacing (TCP), Procedure 23.
Pediatric Bradycardia

**Initial Assessment**
*Identify and treat Underlying Cause*
- Maintain patent airway; assist breathing as necessary
- Administer Oxygen
- Apply Cardiac Monitor to identify rhythm; monitor blood pressure and SAO₂
- IV/IO Access
- Perform 12-Lead ECG if available; but don’t delay therapy

**CPR IF HR < 60/MIN with poor perfusion despite oxygenation and ventilation**

**Patient Stable?**
- **YES**
- **NO**

**Bradycardia persists?**
- **YES**
- **NO**

**Epinephrine 1:10,000**
- 0.1 mg/kg

**Atropine**
- 0.2 mg/kg

**MCP**

**Consider Epi Drip, Inotropes and Pacing**
J. Post Resuscitative Care (ROSC)

1. Optimize ventilation and oxygenation.
   
a) Maintain oxygen saturation ≥ 94% to avoid potential oxygen toxicity due to excessive ventilation, titrate to a target ETCO2 35-40 mmHg.

b) Glycemic control measures should be implemented since there is an increased risk for hypoglycemia in the post-arrest phase. Measure and treat hypoglycemia Protocol 36P.

2. Assess and treat for persistent shock.
   
a) Administer a fluid bolus up to 20 mL/kg of NS. Consider smaller boluses (10 mL/kg) if poor cardiac function is suspected. Monitor the patient’s B/P or perfusion in the most appropriate manner (peripheral circulation; pulses, CRT, skin condition) and lung sounds often. It is not mandatory to administer the max dose of fluid bolus prior to proceeding to Epinephrine or Dopamine. Clinical judgement should be utilized in determining when to proceed to Epinephrine.

   b) Epinephrine Infusion at 0.1-1 mcg/kg/min Appendix 9.2.

   c) Dopamine Infusion at 2-20 mcg/kg/minute and titrate to effect Appendix 9.1.

3. Monitor and treat seizures and agitation.

4. Transport to the most appropriate pediatric facility for management and definitive care.