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The following protocol is intended for the systematic treatment of common cardiac dysrhythmia and cardiac arrest scenarios in the pediatric patient. The “pit crew approach” will be utilized by all personnel when providing resuscitation as outlined in this protocol.

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 while 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.
 - a) Rotate compressor every 2 minutes, or sooner to limit rescuer fatigue to provide high-quality chest compressions.
 - b) Limit any interruptions to 10 seconds or less for AED/cardiac monitor application. During defibrillation attempts; perform chest compressions while AED/cardiac monitor is charging.

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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.

7. All patients found in cardiac arrest or who arrest prior to transport will be resuscitated in place (limit movement, no attempts in loading or transport) for a minimum of **20 minutes** prior to the transportation of the patient to definitive care.

B. Pediatric Cardiopulmonary Resuscitation

EMS/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.

The initial 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, sniffing position, DO NOT hyperextend the neck.
 - b. Child – Head-tilt/chin lift
- b) Provide rescue breaths once every 3-5 seconds using a BVM and insert an appropriately sized airway adjunct. 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.

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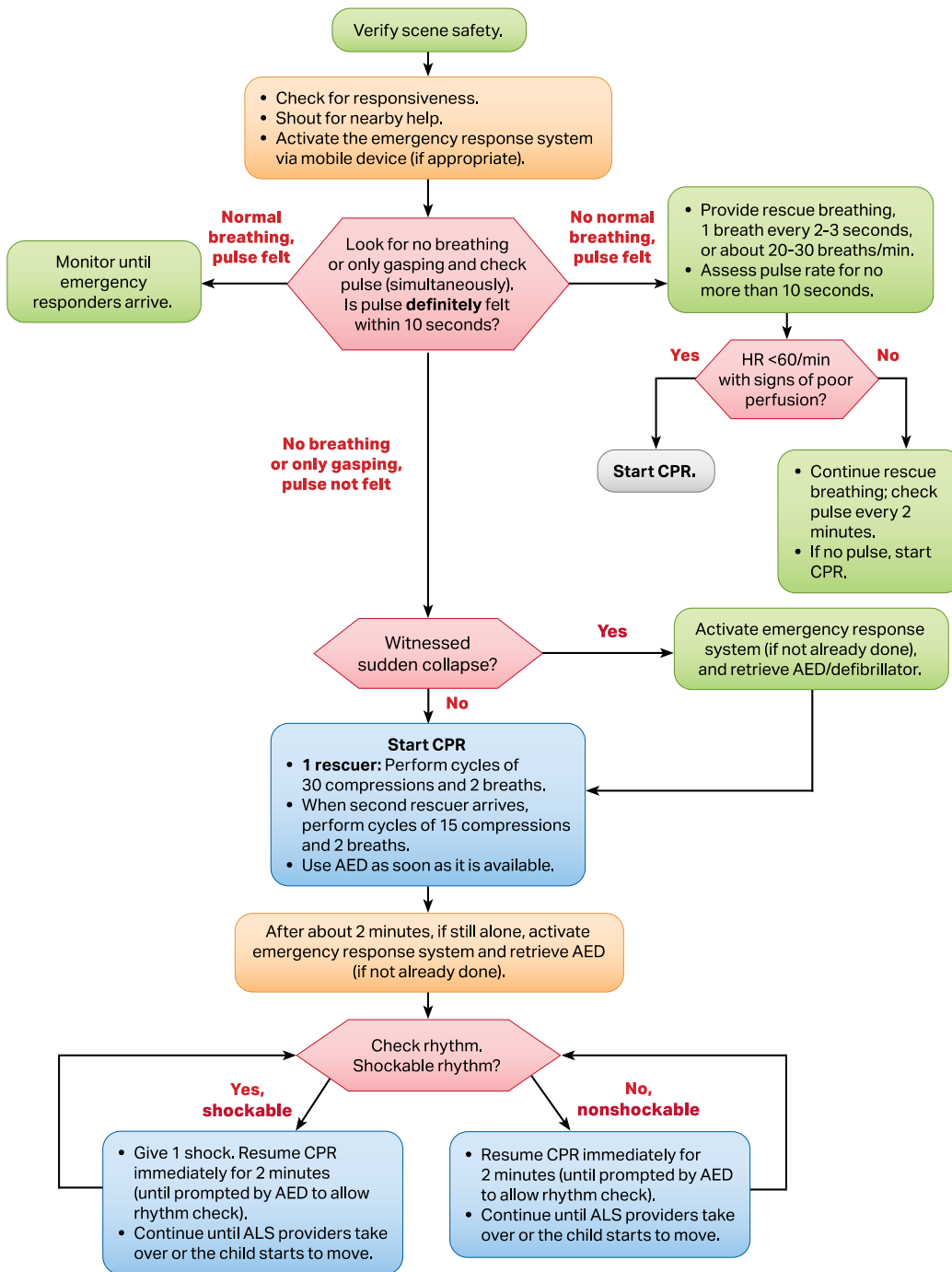


- b) When the second rescuer is available, begin 15 compressions and 2 ventilations for 10 cycles of CPR.
4. If AED is available, place device on patient using pediatric appropriate attachments. If no pediatric attachments are available, use adult size pads. Consider anterior/posterior placement of the adult pads and ensure the placement of each pad does not overlap one another.
5. Apply the AED as soon as possible:
 - a) Allow the AED to analyze the patient's rhythm, follow the machine prompts and if shock is advised, deliver shock as soon as possible.
 - 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 by performing chest compressions while the AED is charging.
 - e) Resume CPR beginning with chest compressions immediately after each shock and continue to follow the prompts of the AED.

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 of the utmost importance for patient survival.

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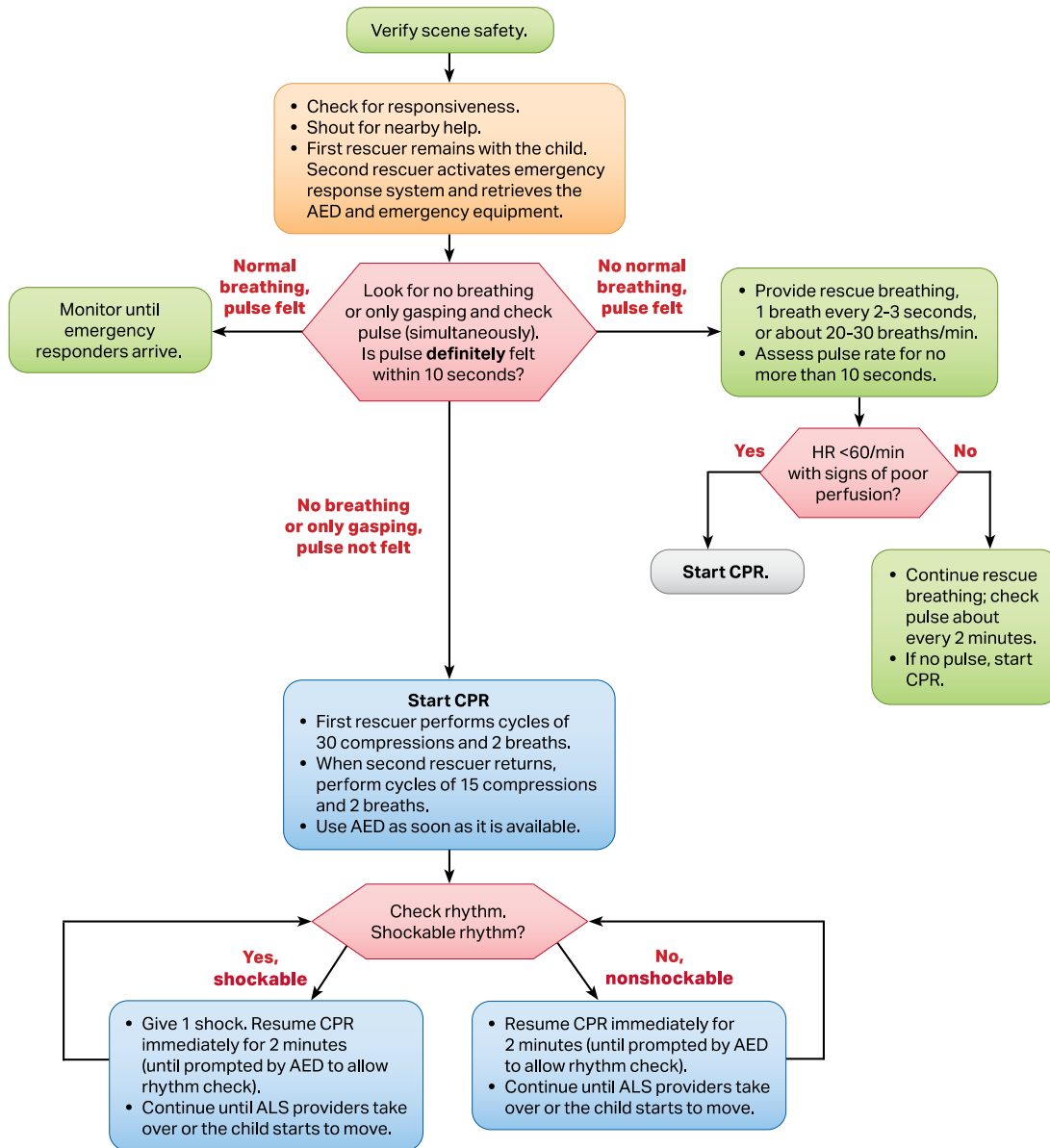
Pediatric Basic Life Support Algorithm for Healthcare Providers—Single Rescuer



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Pediatric Basic Life Support Algorithm for Healthcare Providers—2 or More Rescuers



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ALS

6. Initiate appropriate advanced airway procedures - Airway Management [Protocol 7P](#) while performing high-quality chest compressions.
7. Immediately apply and attach the defibrillator pads.
8. Turn on the **Monitor/Defibrillator** and switch the monitor to “paddles.”
9. Analyze for a **shockable rhythm**:
 - a) Ventricular Fibrillation (V-Fib or VF)
 - b) Pulseless Ventricular Tachycardia (pVT) (Monomorphic V-Tach or VT)
 - c) Torsades De Pointes or Polymorphic VT
10. If the patient presents with a shockable rhythm, deliver shock as soon as possible.
 - 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,
 - i. 15 compressions 2 breaths for 10 cycles (2 minutes) if no advanced airway in place.
 - ii. Once an advanced airway is in place, ventilate 1 breath every 6 seconds with continuous chest compressions (2 minutes).
11. If the patient does not present with a shockable rhythm:
 - a) **Resume CPR** beginning with chest compressions after each reassessment.
12. Reassessment shall be done after every 2 minutes of CPR, simultaneously checking for a pulse and confirming the underlying rhythm.
13. **Establish vascular access via IV (preferred) or IO** as soon as possible without delaying chest compressions. [Procedure 13](#) or [Procedure 14](#).
14. Deliver medications in accordance with the rhythm-based protocol the patient is being treated under the proceeding sections in this protocol.
15. For patients with trauma to the torso that are in traumatic cardiac arrest, perform bilateral needle decompression [Procedure 5](#). This is done to ensure there is no tension pneumothorax as the cause of cardiac arrest.
16. Attach and monitor **End Tidal CO₂** and waveform capnography [Procedure 11](#).

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C. Ventricular Fibrillation/Pulseless Ventricular Tachycardia (VF/pVT)

ALS

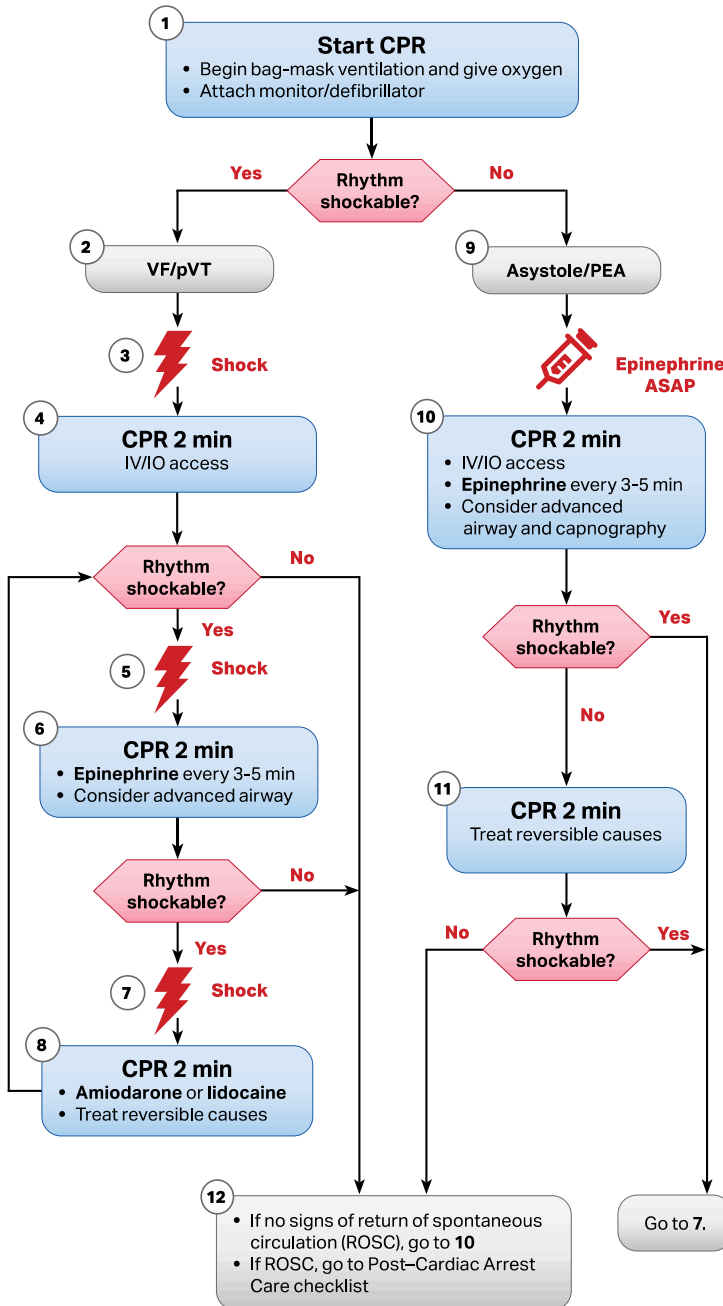
1. **Defibrillate at 2 J/kg** and subsequent defibrillations should escalate beginning at **4 J/kg** up to **MAX dose of 10 J/kg (or adult dose)**.
 - a) Analyze for a shockable rhythm and repeat defibrillation as necessary for recurrent VF/pVT after every 2 minutes of high-quality CPR.
2. **Establish vascular access via IV or IO [Procedure 14](#)** as soon as possible without delaying chest compressions.
3. Administer **Epinephrine (1:10,000) 0.01 mg/kg**, (0.1 mL/kg) IV/IO push every 3-5 minutes for the duration of the arrest.
 - a) Follow the drug administration with a 5 – 10 mL NS flush and high-quality CPR to circulate for 2 minutes prior to another rhythm analysis and pulse check
4. Consider establishing an advanced airway [Protocol 7P](#) at this point forward with limited to no interruptions in CPR and monitor with continuous quantitative waveform capnography (EtCO₂).
5. Administer **Amiodarone OR Lidocaine**. The selection of **one** anti-arrhythmic will continue for the remainder of the VF/pVT algorithm.
 - a) **Amiodarone**
 - i. Initial dose: **5 mg/kg** IV/IO push
 - ii. May repeat every 3-5 minutes, up to a total of 3 doses for refractory VF/pVT.

OR

 - b) **Lidocaine**
 - i. Initial dose: **1 mg/kg** IV/IO push
 - ii. Additional dose: **1 mg/kg** IV/IO push in 3-5 minutes, may repeat once, up to maximum total dose of **3 mg/kg**
 - c) Follow the drug administration with a 5-10 mL NS flush and high-quality CPR to circulate for 2 minutes prior to another rhythm analysis and pulse check.
6. 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).
7. Consider underlying causes and manage as soon as possible. indicated in “**Potentially Reversible Causes in Cardiac Arrest**” at the end of [Section H](#), PEA.
8. After ROSC, refer to the Post Resuscitative Care Protocol [Section J](#).

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Pediatric Cardiac Arrest Algorithm



CPR Quality
<ul style="list-style-type: none"> • Push hard ($\geq 1/3$ of anteroposterior diameter of chest) and fast (100-120/min) and allow complete chest recoil • Minimize interruptions in compressions • Change compressor every 2 minutes, or sooner if fatigued • If no advanced airway, 15:2 compression-ventilation ratio • If advanced airway, provide continuous compressions and give a breath every 2-3 seconds
Shock Energy for Defibrillation
<ul style="list-style-type: none"> • First shock 2 J/kg • Second shock 4 J/kg • Subsequent shocks ≥ 4 J/kg, maximum 10 J/kg or adult dose
Drug Therapy
<ul style="list-style-type: none"> • Epinephrine IV/IO dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Max dose 1 mg. Repeat every 3-5 minutes. If no IV/IO access, may give endotracheal dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration). • Amiodarone IV/IO dose: 5 mg/kg bolus during cardiac arrest. May repeat up to 3 total doses for refractory VF/pulseless VT or • Lidocaine IV/IO dose: Initial: 1 mg/kg loading dose
Advanced Airway
<ul style="list-style-type: none"> • Endotracheal intubation or supraglottic advanced airway • Waveform capnography or capnometry to confirm and monitor ET tube placement
Reversible Causes
<ul style="list-style-type: none"> • Hypovolemia • Hypoxia • Hydrogen ion (acidosis) • Hypoglycemia • Hypo-/hyperkalemia • Hypothermia • Tension pneumothorax • Tamponade, cardiac • Toxins • Thrombosis, pulmonary • Thrombosis, coronary

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D. Wide Complex Tachycardia – Regular (Monomorphic) with a Pulse

Infants: Rate \geq 220/min./Children: Rate \geq 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 any time, 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 of cardiopulmonary compromise:

- a. Acutely altered mental status
- b. Signs of shock
- c. Hypotension

BLS

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

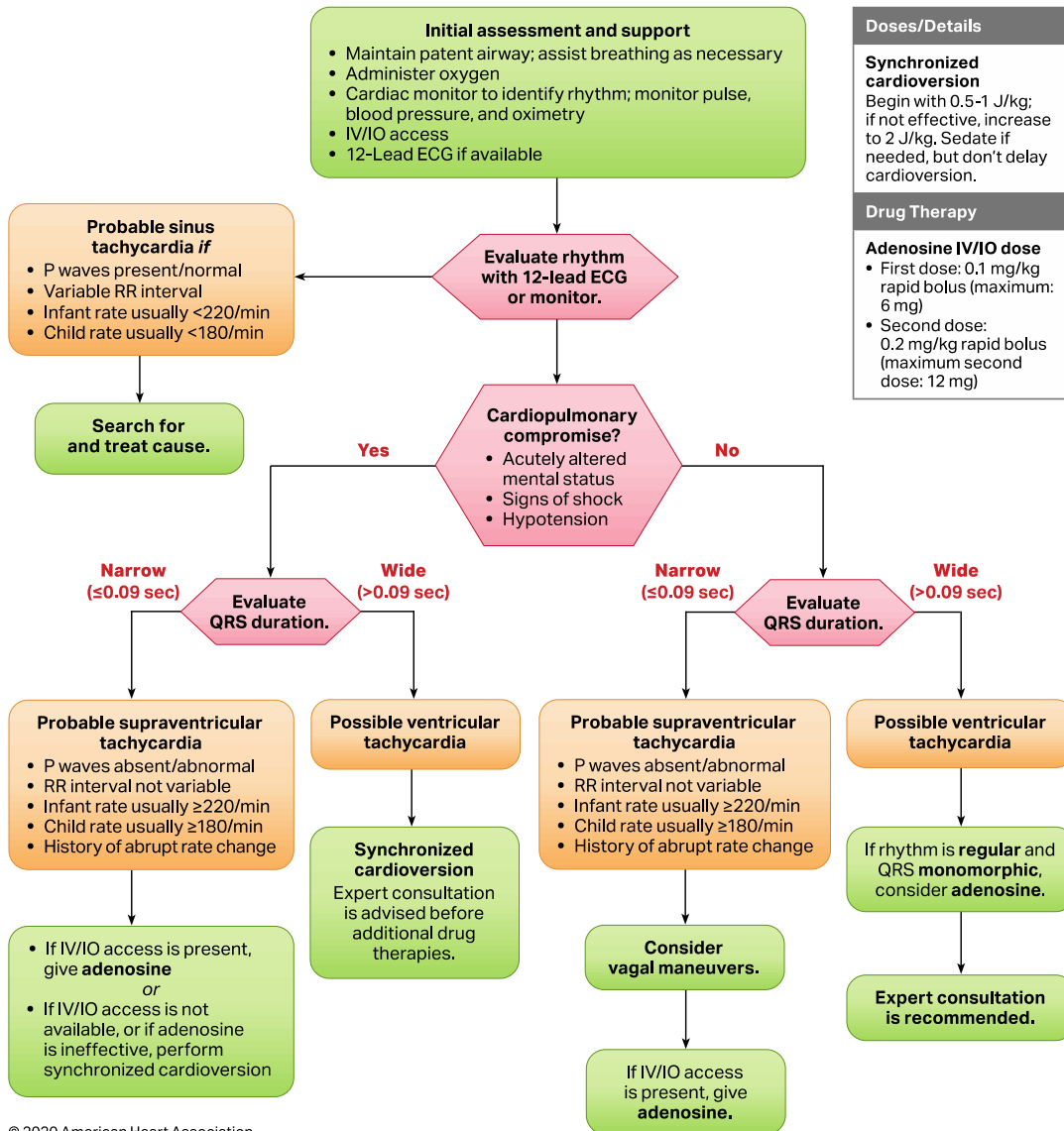


ALS

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](#).

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Pediatric Tachycardia With a Pulse Algorithm



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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 \geq 220/min./Children: Rate \geq 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

"Unstable" includes patients presenting with **ANY** of the following signs of cardiopulmonary compromise:

- a. Acutely altered mental status
- b. Signs of shock
- c. Hypotension

BLS

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

ALS

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

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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.

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SVT - Stable Patient

Regular, Narrow Complex (QRS \leq 0.09 sec)

Infants: Rate \geq 220/min./Children: Rate \geq 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.

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SVT - Unstable Patient

Regular, Narrow Complex (QRS \leq 0.09 sec)

Infants: Rate \geq 220/min./Children: Rate \geq 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 of cardiopulmonary compromise:

- a. Acutely altered mental status
- b. Signs of shock
- c. 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.

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G. Asystole, Agonal rhythm, Idioventricular with rate \leq 20 bpm or Pulseless Bradycardias

If heart rate is $<$ 60/min. in an infant or child, along with poor systemic perfusion, begin chest compressions.

BLS

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

ALS

2. Initiate CPR according to AHA standards. Two minutes of CPR will be done prior to stopping and assessing the rhythm.
3. Airway Management [Protocol 7P](#).
4. 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.
5. 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.
6. 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)

BLS

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

ALS

2. Initiate CPR according to AHA standards. Two minutes of CPR will be done prior to stopping and assessing the rhythm.
3. Airway Management [Protocol 7P](#).
4. 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.
5. Administer **Epinephrine 1:10,000 0.01 mg/kg IV/IO** (0.1 mL/kg) MAX SINGLE DOSE 1 mg.

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- 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.
6. 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 (H's and T's)	
Hypovolemia	Fluid bolus of 20 mL/kg; 10 mL/kg for neonates (< 1 month), rapid transport
Hypoxemia	Confirm adequacy of oxygenation, airway management, consider establishing advanced airway.
Hydrogen-ions (Acidosis)	Provide assisted ventilation with an advanced airway and monitor EtCO ₂ Administer Sodium Bicarbonate 1 mEq/kg IV/IO
Hypothermia	Active rewarming of patient
Hypoglycemia	Treat per Protocol 36P , Impaired Consciousness
Hyperkalemia	Calcium Chloride and/or Sodium Bicarbonate.
Tension Pneumothorax	Perform chest needle decompression Procedure 5
Tamponade, Cardiac	Outside of EMS Scope of Practice – Transport to closest most appropriate hospital
Toxins	Refer to Protocol 15P
Thrombosis (Pulmonary/Coronary)	Transport to a STEMI – PCI capable facility
Trauma	Refer to Section K

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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.

Symptomatic/"Unstable" includes patients presenting with **ANY** of the following signs of cardiopulmonary compromise:

- a) Acutely altered mental status
- b) Signs of shock
- c) Hypotension

BLS

1. Initial Assessment/Care [Protocol 1P](#).
2. Provide oxygen.
3. Begin assisting ventilations and oxygenate patient via BVM if HR < 100, reassess every 2 min.
4. Initiate CPR according to AHA standards [Section A](#) if patient's heart rate < 60 or despite of assistance of ventilations & oxygenation.
5. Two minutes of CPR will be done prior to stopping and assessing the rhythm.

ALS

6. 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.
7. 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)
8. 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)
9. During the reassessment every 2 minutes and patient becomes pulseless, continue resuscitation efforts and follow [Section B](#), Pediatric Cardiopulmonary Resuscitation.

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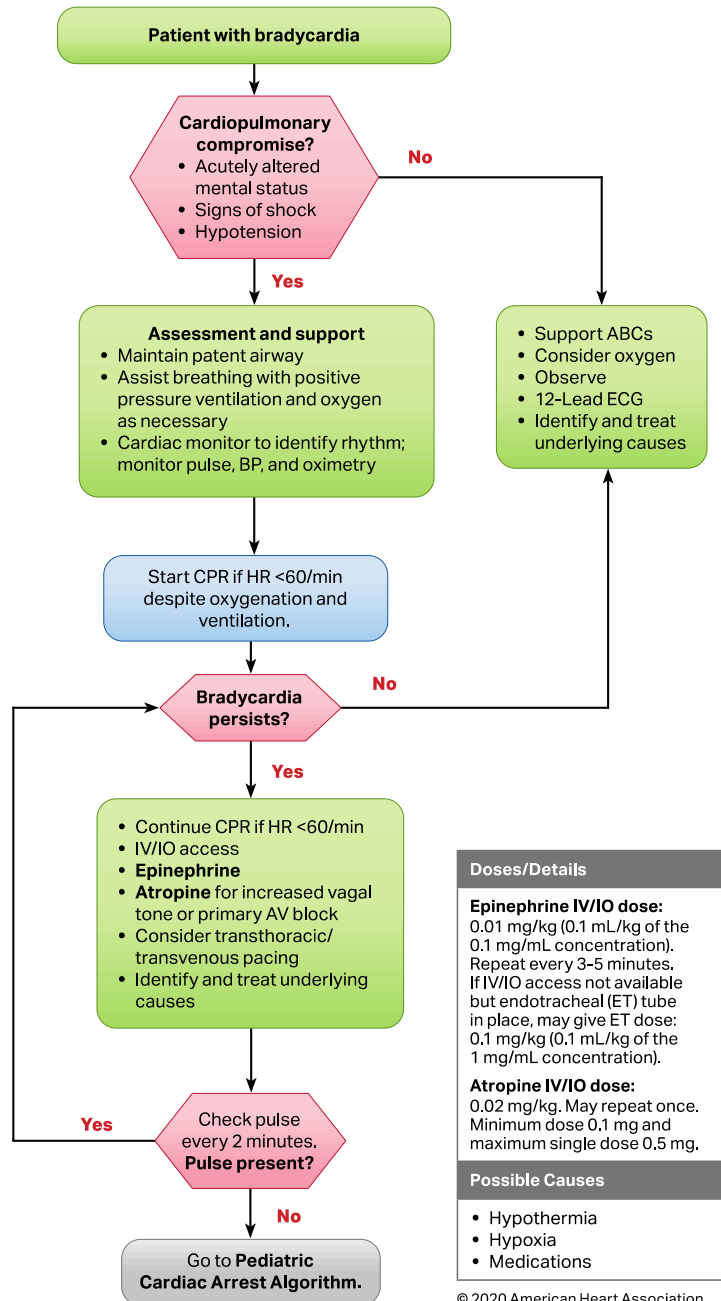
10. Consider causes and manage as indicated in the following chart, “**Potentially Reversible Causes in Cardiac Arrest.**”

MCP

11. Epinephrine infusion.
12. Dopamine infusion.
13. External pacing (TCP), [Procedure 23](#).

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Pediatric Bradycardia With a Pulse Algorithm



Doses/Details
<p>Epinephrine IV/IO dose: 0.01 mg/kg (0.1 mL/kg of the 0.1 mg/mL concentration). Repeat every 3-5 minutes. If IV/IO access not available but endotracheal (ET) tube in place, may give ET dose: 0.1 mg/kg (0.1 mL/kg of the 1 mg/mL concentration).</p> <p>Atropine IV/IO dose: 0.02 mg/kg. May repeat once. Minimum dose 0.1 mg and maximum single dose 0.5 mg.</p>
Possible Causes
<ul style="list-style-type: none"> • Hypothermia • Hypoxia • Medications

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J. Post Resuscitative Care (ROSC)

ALS

1. Optimize ventilation and oxygenation.
 - a) Maintain oxygen saturation $\geq 94\%$ 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.

Components of Post-Cardiac Arrest Care	Check
Oxygenation and ventilation	
Measure oxygenation and target normoxemia 94%-99% (or child's normal/appropriate oxygen saturation).	<input type="checkbox"/>
Measure and target Paco ₂ appropriate to the patient's underlying condition and limit exposure to severe hypercapnia or hypocapnia.	<input type="checkbox"/>
Hemodynamic monitoring	
Set specific hemodynamic goals during post-cardiac arrest care and review daily.	<input type="checkbox"/>
Monitor with cardiac telemetry.	<input type="checkbox"/>
Monitor arterial blood pressure.	<input type="checkbox"/>
Monitor serum lactate, urine output, and central venous oxygen saturation to help guide therapies.	<input type="checkbox"/>
Use parenteral fluid bolus with or without inotropes or vasopressors to maintain a systolic blood pressure greater than the fifth percentile for age and sex.	<input type="checkbox"/>
Targeted temperature management (TTM)	
Measure and continuously monitor core temperature.	<input type="checkbox"/>
Prevent and treat fever immediately after arrest and during rewarming.	<input type="checkbox"/>
If patient is comatose apply TTM (32°C-34°C) followed by (36°C-37.5°C) or only TTM (36°C-37.5°C).	<input type="checkbox"/>
Prevent shivering.	<input type="checkbox"/>
Monitor blood pressure and treat hypotension during rewarming.	<input type="checkbox"/>
Neuromonitoring	
If patient has encephalopathy and resources are available, monitor with continuous electroencephalogram.	<input type="checkbox"/>
Treat seizures.	<input type="checkbox"/>
Consider early brain imaging to diagnose treatable causes of cardiac arrest.	<input type="checkbox"/>
Electrolytes and glucose	
Measure blood glucose and avoid hypoglycemia.	<input type="checkbox"/>
Maintain electrolytes within normal ranges to avoid possible life-threatening arrhythmias.	<input type="checkbox"/>
Sedation	
Treat with sedatives and anxiolytics.	<input type="checkbox"/>
Prognosis	
Always consider multiple modalities (clinical and other) over any single predictive factor.	<input type="checkbox"/>
Remember that assessments may be modified by TTM or induced hypothermia.	<input type="checkbox"/>
Consider electroencephalogram in conjunction with other factors within the first 7 days after cardiac arrest.	<input type="checkbox"/>
Consider neuroimaging such as magnetic resonance imaging during the first 7 days.	<input type="checkbox"/>

K. Pediatric Traumatic Arrest

EMR/BLS

1. Begin cardiopulmonary resuscitation as outlined in [Section B](#).
 - a) Resuscitation efforts can be terminated if the patient meets criteria outlined in [Protocol 27](#).
2. Perform airway management [Protocol 7P](#).
3. Simultaneous interventions:
 - a) Hemorrhage Control as necessary [Protocol 21P](#).

ALS

- b) Perform bilateral needle decompression [Procedure 5](#), beginning on the most injured side first.
 - c) Establish at least two large-bore IVs.
4. Follow the most appropriate ACLS algorithm according to rhythm presented and consider the potential etiology of the arrest.
5. Transport to the closest Pediatric Trauma Center.

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