



Cardiac Events: Ventricular Fibrillation (VF)/ Pulseless Ventricular Tachycardia (pVT)

OBJECTIVE

- Demonstrate proper management of shockable, pulseless arrest rhythms: ventricular fibrillation (VF) and pulseless ventricular tachycardia (pVT).

REFERENCE

- *Pediatric Education for Prehospital Professionals*, 4th Edition

EVALUATION

- The instructor will verify the student's ability to manage the pediatric arrest patient, with emphasis on high-quality, uninterrupted chest compressions with accompanying advanced care.

EQUIPMENT

- Personal protective equipment (PPE)
- Pediatric (infant/child) manikin with CPR and airway management capabilities
- Airway management kit to include bag-valve mask, nonbreathing mask, nasal cannula, suction catheters, stethoscope, endotracheal equipment, suction catheter, towel, and ETCO₂ detector
- AED trainer/cardiac monitor with ECG leads, electrodes, and training pads
- Color-coded length-based tape or similar tool
- Rhythm generator
- Waveform capnography equipment
- IV/IO device, if applicable
- Cardiac training medications or drug cards

INSTRUCTOR GUIDELINES

1. Ensure that each student has access to all required materials.
2. Read the objective and the evaluation statement to students.

PERFORMANCE STEPS

1. The team prepares the equipment.
2. The team leader assigns roles to team members (airway, medications, cardiac monitor, chest compressions) and ensures that effective communication is used throughout skill.
3. The team verbalizes that body substance isolation (BSI) precautions were considered.
4. The team performs a rapid assessment utilizing the Pediatric Assessment Triangle (PAT) and primary survey (XABCDE).
5. The team determines the patient is apneic/pulseless and initiates high-quality chest compressions and ensures a patent airway, ventilation, and ETCO₂.
6. The team leader ensures adequate chest rate and depth of compressions and oxygenation via bag-valve mask, using proper ventilation technique (*squeeze, release, release*) and directs airway management.
7. The team attaches the AED/cardiac monitor and evaluates the rhythm after 2 minutes of high-quality chest compressions.
8. The team recognizes the shockable rhythm and defibrillates at the appropriate joule setting (2 J/kg; 4 J/kg for any subsequent defibrillation).
9. The team establishes IV or IO access.
10. The team determines the need to prepare and administer the appropriate dose of epinephrine every 3–5 minutes.
11. The team reassesses the patient's response to care every 2 minutes.
12. The team determines the need to prepare and administer the appropriate dose of amiodarone (5 mg/kg). May repeat twice, for a maximum total of 15 mg/kg, or lidocaine (1 mg/kg) initial loading dose.

- 13. The team considers the causes of ventricular fibrillation by identifying reversible causes (Hs and Ts)

H	T
<ul style="list-style-type: none">▪ Hypovolemia▪ Hypoxia▪ Hypo/Hyperglycemia▪ Hydrogen ion (acidosis)▪ Hypo/Hyperkalemia▪ Hypothermia	<ul style="list-style-type: none">▪ Tension pneumothorax▪ Tamponade (cardiac)▪ Toxins▪ Thrombosis (cardiac)▪ Thrombosis (pulmonary)

- 14. The team considers transport to the closest, most appropriate destination or cessation of efforts.
- 15. The team provides support for family and caregivers.

CRITICAL CRITERIA

- The team does not use appropriate PPE precautions.

- The team leader does not assign roles within the team.
- The team fails to recognize absence of pulse and respirations through primary assessment.
- The team fails to initiate CPR by performing high-quality chest compressions and appropriate airway management procedures throughout care or until return of spontaneous circulation (ROSC).
- The team fails to place patient on cardiac monitor and recognize shockable rhythm (VF/pVT).
- The team fails to safely defibrillate at the appropriate joule setting for initial defibrillations.
- The team fails to establish vascular access through IV/IO.
- The team fails to administer the appropriate dose of epinephrine at recommended intervals.
- The team fails to safely defibrillate at the appropriate joule setting for additional doses, as necessary.
- The team fails to administer appropriate dose of amiodarone or lidocaine at recommended intervals
- The team fails to identify and/or treat potential underlying causes.