Pediatric Cardiac Arrest

For non-traumatic cardiac arrest in which any resuscitation is initiated, NOT dead on arrival

**History**
- Code status (DNR or POLST)
- Events leading to arrest
- Estimated downtime
- History of current illness
- Past medical history
- Medications
- Existence of terminal illness

**Signs and Symptoms**
- Unresponsive
- Apneic
- Pulseless

**Differential**
- Airway obstruction/respiratory disease
- Medical vs. trauma
- VF vs. pulseless VT
- Asystole
- PEA
- Primary cardiac event vs. respiratory arrest or drug overdose

**Criteria for death/no resuscitation**
- Review DNR/POLST form
- AT ANY TIME
  - Return of spontaneous circulation
  - Go to Post Resuscitation

**Decomposition**
- Rigor mortis
- Do not begin resuscitation
  - Follow Policy 507 – Determining Death

**Obvious Death**

**If arrest occurred in cold water or hypothermia is suspected, aggressively rewarm patient during resuscitation (see pearls)**

**Begin continuous chest compressions**
- Push hard (> 2 inches) and fast (110/min)
- Use metronome to ensure proper rate
- Change compressors every 2 minutes (Limit changes/pulse checks to < 5 seconds)
  - For suspected narcotic overdose, Naloxone

**ALS available?**
- Yes
  - Continue CPR
    - 2 minutes
    - Repeat and assess
  - Automated defibrillation
    - Continue CPR
      - 2 minutes
      - Repeat and assess

**Suspected traumatic arrest?**
- Yes
  - Traumatic Arrest
  - For suspected narcotic overdose, Naloxone

**Apply AED if available**
- Shockable rhythm?
  - Yes
  - Cardiac monitor
    - EtCO\(_2\) monitoring
    - Shockable rhythm?
      - Yes
      - Asystole/PEA
      - VF/VT

**Notify receiving facility. Consider Base Hospital for medical direction**
Pearls

- Airway is a critically important intervention in pediatric arrests. This should be accomplished quickly with a BVM, airway adjunct, and appropriately sized mask. Patient survival is often dependent on proper ventilation and oxygenation.
- If arrest occurred in cold water or hypothermia is suspected, check for pulselessness for 30-45 seconds to avoid unnecessary chest compressions. Defer ACLS medications until patient is warmed.
- Hypothermic cardiac arrest patients who do not meet obvious death criteria listed in PC05 – Obvious Death may have good neurologic outcomes despite lengthy resuscitation. Transport should be initiated early and resuscitative efforts should continue until patient is warmed. Place hot packs on groin and in axilla bilaterally, apply blankets, and activate heater in the patient compartment of the ambulance.
- Severe hypothermia may cause cardiac instability. Avoidance of excess stimuli is important in severe hypothermia as the heart is sensitive and interventions may induce arrhythmias. Necessary interventions should be done as gently as possible. If available, use warm saline.
- Efforts should be directed at high quality chest compressions with minimal interruptions.
- Use appropriately sized pediatric BVM with EtCO$_2$.
- Do not delay chest compressions while applying any device or intervention.
- Use a metronome during chest compression to ensure proper rate.
- Provide resuscitative efforts for 30 minutes to maximize chance of ROSC. If immediate transport is necessary, make sure all necessary interventions are in place prior to transport.
- If resuscitative efforts do not attain ROSC, consider cessation of efforts per Policy 507 – Determining Death.
- Resuscitation is based on proper planning and organized execution. Procedures require space and patient access. Make room to work. Utilize a team focused approach assigning responders to predetermined tasks.
- Reassess airway and document EtCO$_2$ frequently.
- Pediatric pads for children should be used based on manufacturer recommendation.