

**Replaces BLS # 501 Medical Cardiac Arrest and ALS# 610 Adult Pulseless Arrest**

<b>PULSELESS CARDIAC ARREST (ATRAUMATIC) HIGH PERFORMANCE CPR (HPCPR)</b>	
<b>ADULT</b>	<b>PEDIATRIC (≤34 kg)</b>
<b>BLS</b>	
<ul style="list-style-type: none"> <li>• <b><u>Position 1 (P1) – Initial Team Leader</u></b> <b>( At side of the patient)</b> <ul style="list-style-type: none"> <li>○ Initiate compressions at 110/min (100-120/min)</li> <li>○ Alternate with P2 at 200 compressions</li> <li>○ Coordinate and verbalize compression rate with P2</li> </ul> </li>   <li>• <b><u>Position 2 (P2) – (Opposite side of patient)</u></b> <ul style="list-style-type: none"> <li>○ Activate Metronome</li> <li>○ Apply and operate AED or ALS Monitor with minimal interruption of compressions - until P3 arrives</li> <li>○ At 200 compressions (or 2 min cycle with AED)                             <ul style="list-style-type: none"> <li>▪ BLS AED – if analysis states “shock advised” provide 30 additional compressions prior to shocking</li> <li>▪ ALS monitor – pre-charge while continuing compressions. Once fully charged stop compressions to analyze – shock if indicated or dump charge (pulse check with organized rhythm if indicated)</li> <li>▪ Alternate with P1 at 200 compressions or the AED analysis</li> </ul> </li> <li>○ Provide for Passive Oxygenation Insufflation (POI)</li> <li>○ When P3 arrives and can maintain two-hand mask seal, ventilate with BVM every 10 compressions (10-12/min) on up-stroke</li> <li>○ Coordinate and verbalize compression rate with P1</li> </ul> </li>   <li>• <b><u>Position 3 (P3) BLS – (At patient’s head)</u></b> <ul style="list-style-type: none"> <li>○ Becomes <b>Team Leader</b></li> <li>○ Manage airway/suction as needed</li> <li>○ Maintain two-hand mask seal on BVM allowing P2 to ventilate (10:1)</li> <li>○ Operates AED with minimal interruption of compressions</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Same as Adult (except for neonate)</li> <li>• Neonate (&lt; 1 month) follow AHA guidelines</li> <li>• CPR compression to ventilation ratio                             <ul style="list-style-type: none"> <li>○ Newborn – CPR 3:1</li> <li>○ 1 day to 1 month – CPR 15:2</li> <li>○ &gt; 1 month – HPCPR 10:1</li> </ul> </li> <li>• AED – pediatric patient &gt; 1 year</li> <li>• Use Broselow tape or equivalent if available</li> </ul>
<b>BLS Optional</b>	
Pulse Oximetry – O <sub>2</sub> administered per Airway Management – Protocol #602	
<b>ALS Standing Orders</b>	
<ul style="list-style-type: none"> <li>• <b><u>Position 3 (P3) ALS – At patient’s head</u></b></li> </ul>	<ul style="list-style-type: none"> <li>• Same as Adult</li> </ul>

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<p><b><u>Assumes Team Leader</u></b></p> <ul style="list-style-type: none"> <li>○ Directs CPR quality based on monitor feedback (rate and depth)</li> <li>○ Maintain two-hand mask seal on BVM</li> <li>○ Apply capnography</li> <li>○ Charge the defibrillator and analyze for shockable rhythm every 200 compressions (continue compressions while monitor charges)</li> <li>○ Consider endotracheal intubation only if airway not compliant or with maintained ROSC</li> </ul> <p>• <b><u>Position 4 (P4) ALS – position outside of the CPR Triangle (May assume Team Leader Role)</u></b></p> <ul style="list-style-type: none"> <li>○ Obtain report from P3</li> <li>○ Establish vascular access IV or IO (IV preferred)</li> <li>○ Administer medications per Pulseless Cardiac Arrest Protocol #641</li> <li>○ Interacts with family</li> </ul> <p>• <b><u>Position 5 (P5) if available</u></b></p> <ul style="list-style-type: none"> <li>○ Assists where needed</li> <li>○ May become point person to communicate with family</li> </ul>	
<b>Base Hospital Orders Only</b>	
<ul style="list-style-type: none"> <li>• As needed</li> </ul>	<ul style="list-style-type: none"> <li>• As needed</li> </ul>
<b>Notes</b>	
<ul style="list-style-type: none"> <li>• <b>HPCPR Performance Points</b> <ul style="list-style-type: none"> <li>○ Minimize interruptions of compressions to &lt; 5-10 sec</li> <li>○ Compression rate 100-120/min (goal of 110/min)</li> <li>○ Provide for full chest recoil</li> <li>○ Passive Oxygen Insufflation (POI)/O<sub>2</sub> via non-rebreather mask – may be utilized during first 8 minutes (4 cycles) of resuscitation by placing an oropharyngeal airway (OPA) and high-flow O<sub>2</sub> via non-rebreather mask</li> <li>○ Do not hyperventilate – small volume on the upstroke of the 10<sup>th</sup> compression</li> <li>○ Perform uninterrupted CPR between rhythm analysis</li> <li>○ Pre-charge the monitor at the 200th compression, continue compressions until the monitor is fully charged</li> <li>○ Pulse check (if indicated) is done with rhythm analysis after monitor is charged</li> <li>○ Immediately resume chest compressions after shock without checking for pulses</li> <li>○ Utilize ETCO<sub>2</sub> numeric value and/or capnography wave form</li> <li>○ In-line or side stream ETCO<sub>2</sub> monitoring utilized with BLS airway management (BVM)</li> <li>○ Each team member coaches other team members in quality CPR. <b>Use CPR feedback on monitor when available</b></li> <li>○ <b>Specific to Adult patients</b> <ul style="list-style-type: none"> <li>▪ Compression Depth is 2-2.5 inches</li> <li>▪ Ventilation Volume is 200-400 ml</li> <li>▪ Indications for pulse check - organized rhythm &gt; 40 BPM</li> </ul> </li> </ul> </li> </ul>	

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- With organized rhythm  $\leq 40$  continue HPCPR for an additional 2 mins, then assess for ROSC
- **Specific to Pediatric patients ( $\leq 34$  kg)**
  - Consider respiratory causes
  - Compression depth 1/3 the depth of the chest
  - Do not hyperventilate - just enough to make the chest rise
  - Indications for pulse check - organized rhythm  $>$  than 60 BPM
    - With organized rhythm  $\leq 60$  continue HPCPR for an additional 2 mins, then assess for ROSC