Cardiac Arrest (AED/CPR/HP CPR) – 10.050

CPR GUIDELINES			
Maneuver	Adult Adolescent and older	Child 1 yr to adolescent	Infant Under 1 year of age
Airway	Head tilt-chin lift. Jaw thrust if suspected cervical trauma.		
Breathing: Without CPR	10 to 12 breaths/min (Approximate)	20 to 30 breaths/min (Approximate)	
Foreign Body – Conscious pt	Abdominal thrusts (*use chest thrusts in pregnant and obese patients or if abdominal thrusts are not effective*)		Back blows and chest thrusts
Compression landmarks	Lower half of sternum between nipples		Just below nipple line (lower half of sternum)
Compression method	Heel of one hand, other hand on top	Heel of one hand, as for adults	2-3 fingers or 2 thumb-encircling hands
Compression depth	At least 2 inches	Approximately one-third anterior/posterior depth of chest. (Approx 2” in child and 1 ½” in infant)	
Compression rate	At least 110 per minute		
Compression-ventilation ratio with or without advanced airway	10:1 Continuous chest compressions	5:1 Continuous chest compressions	

AED GUIDELINES		
AED Defibrillation	Use adult pads, do not use child pads	Use pediatric dose-attenuator system for children and infants if available.

NEONATAL GUIDELINES
Assisted ventilation should be delivered at a rate of 40-60 breaths/minute to achieve or maintain a heart rate > 100 bpm. The ratio of compressions to ventilations should be 3:1, with 90 compressions and 30 breaths to achieve approximately 120 events per minute.

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High Performance Cardio-Pulmonary Resuscitation (HP-CPR)

- Cardiac arrest rhythms frequently change during CPR. If, or when there is a change in the rhythm, move to the appropriate algorithm and next appropriate medication

  Utilize a "Pit-Crew" approach to assigning responders to designated roles. Designated Compression Person will immediately begin continuous chest compressions for 2 minutes at a rate of 110/min. Allow full recoil, compress to a depth ≥2 inches.

- Count 10 compressions and repeat out loud.
- Switch compressors every 2 minutes.
- Designated ventilation person will ventilate person every 10 compressions or 11/min for adult patients, every 5 compressions or 22/min for pediatrics.
- DO NOT interrupt chest compressions for airway/IO/IV placement or medications.
- Paramedics will pre-charge defibrillator and analyze/shock at the end of 2 minutes of CPR and attempt to keep pauses at 10 seconds or less.
- Continue cycles of 2 minutes of CPR and 10 seconds or less of analysis (unless utilizing an AED) or treatment
- Always clear patient before defibrillation.
- Consider early use of extra-glottic/supra-glottic device when ALS resources are limited. Studies have not shown superiority of prehospital use of ET-tube vs extraglottic devices in patient outcome data.
- Preferred order of vascular access is upper extremity IV (or external jugular vein), upper extremity IO, then lower extremity IO.
- With high quality CPR and the addition of mechanical CPR devices, a growing number of patients have been reported to experience "CPR Induced Consciousness". Assess for signs of consciousness by checking for spontaneous eye opening, purposeful movement, or verbal response including moaning. If signs of **"CPR Induced Consciousness"** are present, treat as follows:

  Up to **2.5 mg of midazolam IV/IO** and **50 mcg of fentanyl IV/IO**. May repeat as needed every 5 – 10 minutes prn