- Child age range is 1 year to 8 years of age when using an AED; Child age range is 1 year to puberty for CPR.

Foreign Body Airway Obstruction - Choking

- The best way to relieve severe choking in responsive adult or child – Perform abdominal thrusts. If the adult becomes unresponsive activate the emergency response system and start CPR beginning with compressions.
- The best action to relieve severe choking in a responsive infant – Begin cycles of 5 back slaps, followed by 5 chest thrusts.
- When a victim of foreign-body airway obstruction becomes unresponsive (adult, child, or infant) and the rescuer sends someone to activate emergency response system, and then immediately start CPR beginning with compressions.

Child or Infant With A Heart Rate

- When a child/infant has a pulse of more than 60/minute but is not breathing, the rescuer should give breaths without chest compressions.
- When an unresponsive child/infant has a pulse of less than 60/minute and is not breathing with signs of poor perfusion despite oxygenation and ventilation with a bag-mask, the rescuer should perform both compressions and breaths.

C-A-B is Chest Compressions–Airway–Breaths, Not A-B-C

Chest Compressions

- The rescuer should initially ensure that the scene is safe when the rescuer first sees a potential victim.
- A victim who is unresponsive with no normal breathing and no pulse requires CPR.
- It is appropriate to move an adult victim who needs CPR when the victim is in a dangerous environment.
- To identify cardiac arrest in an unresponsive victim with no breathing (or no normal breathing), a healthcare provider should check a pulse for no more than 10 seconds.
- Adult and child pulse is located on the side of the neck, near the trachea
- Infant pulse is located on the inside of the upper arm, between the elbow and the shoulder.
- It is important to compress to the appropriate depth during CPR to create blood flow during compressions.
- The depth of chest compressions for an adult victim should be *at least* 2 inches (5cm) no more than 2.4 inches.
- The depth of chest compressions for an infant is *at least* one third the depth of the chest, approximately 1½ or 1.5 inches (4cm).
- Recommended rate for performing chest compressions for victims of all ages is *at least* 100/120 compressions per minute.
- Hands are placed on the lower half of the breastbone to perform chest compressions on an adult.
- In 2-rescuer CPR, one rescuer provides chest compressions; the second rescuer maintains an open airway and gives breaths.
- Preferred technique for providing chest compressions during 2-rescuer CPR for the infant is the 2 thumb-encircling hands technique.

Airway

- The best way to open the airway of an unresponsive victim with no suspected neck injury is the head tilt-chin lift.
- After the airway is opened, the proper technique for delivering mouth-to-mouth ventilation is the rescuer opens the airway, seals his or her mouth over the victim's mouth, pinches the victim's nose closed, and gives 2 breaths while watching for the chest to rise.

Breaths

- Bag-mask device/technique is not recommended for a single rescuer to provide breaths during CPR.
- The rescue breath for an adult, child, or infant is effective when the chest rises visibly.
- During bag-mask ventilation, giving a breath just until you see the chest rise is recommended to minimize the risk of air entering the victim's stomach (gastric inflation).
- The compression- ventilation ratio for 1-rescuer adult CPR and 2-rescuer adult CPR is 30:2.
- The compression- ventilation ratio for 2-rescuer child CPR is 15:2.
- The compression- ventilation ratio for 2-rescuer infant CPR is 15:2.
- Compression and ventilation rates for 2-rescuer CPR in the presence of an advanced airway is to compress at a rate of *at least* 100/120 per minute, 1 breath every 6 to 8 seconds.
- When administering breaths by using a bag-mask device for a child who is not breathing but does have a pulse, the rescuer should give breaths at the rate of 1 breath every 3 to 5 seconds.

SAFETYNET
SOLUTIONS IN TRAINING

C-A-B of CPR for Adults, Children, and Infants*

Component	Recommendations		
	Adults Puberty to Adulthood	Children 1 year to Puberty	Infant Birth to <1 year
Recognition	**Check for Responsiveness** **If no response (all ages)**		
	Activate 911 and get the AED or send second rescuer (if available) to do this		
	Check a pulse for no more than 10 seconds While looking for normal breathing		
	No breathing or no normal breathing (i.e., only gasping)	No breathing or only gasping	
CPR sequence	**START C-A-B** Chest compressions, Airway, Breathing		
Compression rate	At least 100/120 min on the lower half of the breastbone		
Compression depth	At least 2 inches (5 cm) no more than 2.4 inches	At least 1/3 AP diameter About 2 inches (5 cm)	At least 1/3 AP diameter About 1½ or 1.5 inches (4 cm)
Chest wall recoil	Allow complete recoil between compressions Rotate compressors every 2 minutes to reduce fatigue during CPR		
Compression interruptions	Minimize interruptions in chest compressions Attempt to limit interruptions to <10 seconds		
Airway	Head tilt–chin lift (suspected trauma: jaw thrust). Avoid excessive ventilation.		
Compression-ventilation ratio	30:2 Single rescuer or 2-rescuers	30:2 Single rescuer 15:2 Two rescuers	
Ventilations with advanced airway	1 breath every 6 seconds Asynchronous with chest compressions (at least 100/120 min) About 1 second per breath with visible chest rise		
Defibrillation	Attach and use AED as soon as available. Minimize interruptions in chest compressions before and after shock; resume CPR beginning with compressions immediately after each shock.		

Abbreviations: AED, Automated External Defibrillator; AP, Anterior-Posterior; CPR, CardioPulmonary Resuscitation.
* Excluding the newly born, in whom the etiology of an arrest is nearly always asphyxial.

BLS for Healthcare Providers Critical Concepts

High–quality CPR improves a victim's chances of survival. The critical characteristics of high-quality CPR include:

- **Start compressions within 10 seconds** of recognition of cardiac arrest. It is important to compress to the appropriate depth to create blood flow. Compressions are important because they pump blood to the rest of the body.
- **Push hard, push fast:** Compress at a rate of at least 100/120 min with a depth of at least 2 inches (5cm) no more than 2.4 for adults, approximately 2 inches (5cm) for children, and approximately 1 ½ or 1.5 inches (4cm) for infants.
- **Allow complete chest recoil** after each compression. Complete chest recoil contributes to effective CPR by allowing the heart to refill with blood between compressions.
- **Minimize interruptions** in compressions (try to limit interruptions to < 10 seconds).
- **Give effective breaths** that make the chest rise.
- **Avoid excessive ventilation.**

Automated External Defibrillator-AED

- As soon as an AED becomes available, the first step the rescuer should perform is to turn on the AED.
- After the AED delivers a shock, the rescuer should immediately restart CPR, beginning with chest compressions.
- Using an AED for an infant or a child less than 8 years of age, adult pads/dose may be used if pediatric pads/dose attenuator is not available.