

Summary of High-Quality CPR Components for BLS Providers

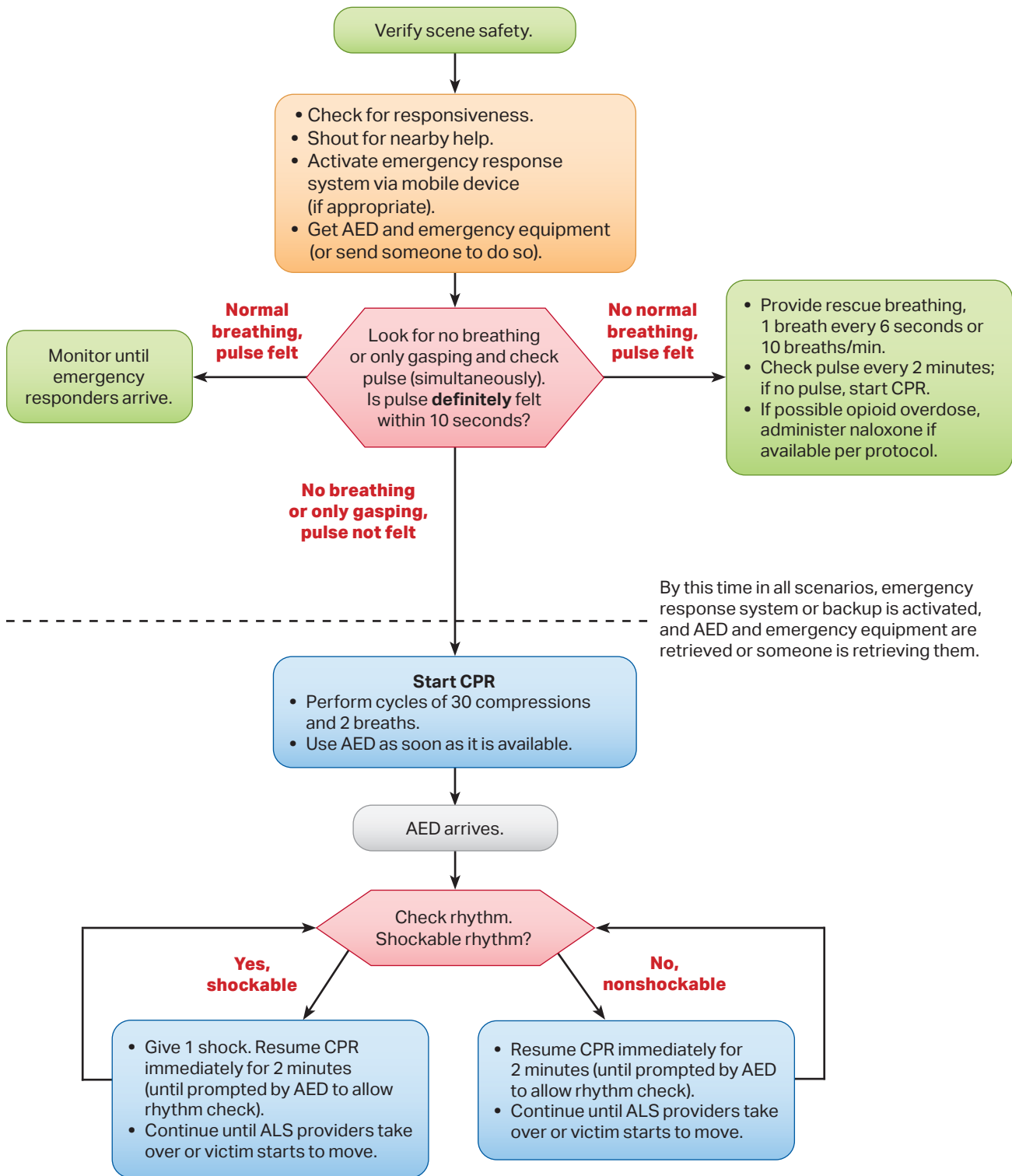


Component	Adults and adolescents	Children (age 1 year to puberty)	Infants (age less than 1 year, excluding newborns)
Verifying scene safety	Make sure the environment is safe for rescuers and victim		
Recognizing cardiac arrest	Check for responsiveness No breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds (Breathing and pulse check can be performed simultaneously in less than 10 seconds)		
Activating emergency response system	If a mobile device is available, phone emergency services (9-1-1)		
	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	Witnessed collapse Follow steps for adults and adolescents on the left Unwitnessed collapse Give 2 minutes of CPR Leave the victim to activate the emergency response system and get the AED Return to the child or infant and resume CPR; use the AED as soon as it is available	
Compression-ventilation ratio <i>without advanced airway</i>	1 or 2 rescuers 30:2	1 rescuer 30:2 2 or more rescuers 15:2	
Compression-ventilation ratio <i>with advanced airway</i>	Continuous compressions at a rate of 100-120/min Give 1 breath every 6 seconds (10 breaths/min)	Continuous compressions at a rate of 100-120/min Give 1 breath every 2-3 seconds (20-30 breaths/min)	
Compression rate	100-120/min		
Compression depth	At least 2 inches (5 cm)*	At least one third AP diameter of chest Approximately 2 inches (5 cm)	At least one third AP diameter of chest Approximately 1½ inches (4 cm)
Hand placement	2 hands on the lower half of the breastbone (sternum)	2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	1 rescuer 2 fingers or 2 thumbs in the center of the chest, just below the nipple line 2 or more rescuers 2 thumb-encircling hands in the center of the chest, just below the nipple line If the rescuer is unable to achieve the recommended depth, it may be reasonable to use the heel of one hand
Chest recoil	Allow complete recoil of chest after each compression; do not lean on the chest after each compression		
Minimizing interruptions	Limit interruptions in chest compressions to less than 10 seconds with a CCF goal of 80%		

*Compression depth should be no more than 2.4 inches (6 cm).

Abbreviations: AED, automated external defibrillator; AP, anteroposterior; CCF, chest compression fraction; CPR, cardiopulmonary resuscitation.

Adult Basic Life Support Algorithm for Healthcare Providers



Adult CPR and AED

Skills Testing Critical Skills Descriptors

- 1. Assesses victim and activates emergency response system (this *must* precede starting compressions) within 30 seconds. After determining that the scene is safe:**
 - Checks for responsiveness by tapping and shouting
 - Shouts for help/directs someone to call for help *and* get AED/defibrillator
 - Checks for no breathing or no normal breathing (only gasping)
 - Scans from the head to the chest for a minimum of 5 seconds and no more than 10 seconds
 - Checks carotid pulse
 - Should be done simultaneously with check for breathing
 - Checks for a minimum of 5 seconds and no more than 10 seconds
- 2. Performs high-quality chest compressions (initiates compressions immediately after recognition of cardiac arrest)**
 - Correct hand placement
 - Lower half of sternum
 - 2-handed (second hand on top of the first or grasping the wrist of the first hand)
 - Compression rate of 100 to 120/min
 - Delivers 30 compressions in 15 to 18 seconds
 - Compression depth and recoil—at least 2 inches (5 cm) and avoid compressing more than 2.4 inches (6 cm)
 - Use of a commercial feedback device or high-fidelity manikin is required
 - Complete chest recoil after each compression
 - Minimizes interruptions in compressions
 - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle
 - Compressions resumed immediately after shock/no shock indicated
- 3. Provides 2 breaths by using a barrier device**
 - Opens airway adequately
 - Uses a head tilt–chin lift maneuver or jaw thrust
 - Delivers each breath over 1 second
 - Delivers breaths that produce visible chest rise
 - Avoids excessive ventilation
 - Resumes chest compressions in less than 10 seconds
- 4. Performs same steps for compressions and breaths for Cycle 2**
- 5. AED use**
 - Powers on AED
 - Turns AED on by pushing button or lifting lid as soon as it arrives
 - Correctly attaches pads
 - Places proper-sized (adult) pads for victim’s age in correct location
 - Clears for analysis
 - Clears rescuers from victim for AED to analyze rhythm (pushes analyze button if required by device)
 - Communicates clearly to all other rescuers to stop touching victim
 - Clears to safely deliver shock
 - Communicates clearly to all other rescuers to stop touching victim
 - Safely delivers a shock
 - Resumes chest compressions immediately after shock delivery
 - Does not turn off AED during CPR
- 6. Resumes compressions**
 - Ensures that high-quality chest compressions are resumed immediately after shock delivery
 - Performs same steps for compressions

Infant CPR

Skills Testing Critical Skills Descriptors

- 1. Assesses victim and activates emergency response system (this *must* precede starting compressions) within 30 seconds. After determining that the scene is safe:**
 - Checks for responsiveness by tapping and shouting
 - Shouts for help/directs someone to call for help *and* get emergency equipment
 - Checks for no breathing or no normal breathing (only gasping)
 - Scans from the head to the chest for a minimum of 5 seconds and no more than 10 seconds
 - Checks brachial pulse
 - Should be done simultaneously with check for breathing
 - Checks for a minimum of 5 seconds and no more than 10 seconds
- 2. Performs high-quality chest compressions during 1-rescuer CPR (initiates compressions within 10 seconds after identifying cardiac arrest)**
 - Correct placement of hands/fingers in center of chest
 - 1 rescuer: 2 fingers or 2 thumbs just below the nipple line
 - *If the rescuer is unable to achieve the recommended depth, it may be reasonable to use the heel of one hand*
 - Compression rate of 100 to 120/min
 - Delivers 30 compressions in 15 to 18 seconds
 - Adequate depth for age
 - Infant: at least one third the depth of the chest (approximately 1½ inches [4 cm])
 - Use of a commercial feedback device or high-fidelity manikin is preferred
 - Complete chest recoil after each compression
 - Appropriate ratio for age and number of rescuers
 - 1 rescuer: 30 compressions to 2 breaths
 - Minimizes interruptions in compressions
 - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle
- 3. Provides effective breaths with bag-mask device during 2-rescuer CPR**
 - Opens airway adequately
 - Delivers each breath over 1 second
 - Delivers breaths that produce visible chest rise
 - Avoids excessive ventilation
 - Resumes chest compressions in less than 10 seconds
- 4. Switches compression technique at appropriate interval as prompted by the instructor (for purposes of this evaluation). Switch should take no more than 5 seconds.**
- 5. Performs high-quality chest compressions during 2-rescuer CPR**
 - Correct placement of hands/fingers in center of chest
 - 2 rescuers: 2 thumb-encircling hands just below the nipple line
 - Compression rate of 100 to 120/min
 - Delivers 15 compressions in 7 to 9 seconds
 - Adequate depth for age
 - Infant: at least one third the depth of the chest (approximately 1½ inches [4 cm])
 - Complete chest recoil after each compression
 - Appropriate ratio for age and number of rescuers
 - 2 rescuers: 15 compressions to 2 breaths
 - Minimizes interruptions in compressions
 - Delivers 2 breaths so less than 10 seconds elapses between last compression of one cycle and first compression of next cycle

Heartsaver® Adult CPR AED



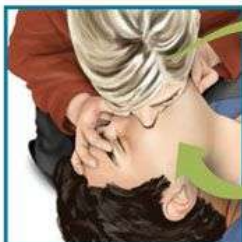
Tap and shout

Yell for help. Send someone to phone 911 and get an AED



Look for no breathing or only gasping

*Push hard and fast.
Give 30 compressions*



*Open the airway and give
2 breaths*

*Repeat sets of 30 compressions
and 2 breaths*



*When the AED arrives, turn it
ON and follow the prompts*

Heartsaver® Child CPR AED



Tap and shout

Yell for help. Send someone to phone 911 and get an AED



Look for no breathing or only gasping

*Push hard and fast.
Give 30 compressions*



*Open the airway and give
2 breaths*

*Repeat sets of 30 compressions
and 2 breaths*



*If you are alone after 5 sets of
30 compressions and 2 breaths,
phone 911, and then resume
sets of 30:2*

*When the AED arrives, turn it
ON and follow the prompts*

Heartsaver® Infant CPR



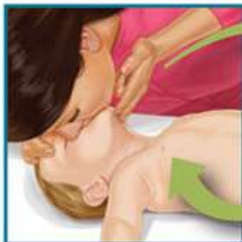
Tap and shout

Yell for help. Send someone to phone 911



Look for no breathing or only gasping

*Push hard and fast.
Give 30 compressions*



Open the airway and give 2 breaths

Repeat sets of 30 compressions and 2 breaths



If you are alone after 5 sets of 30 compressions and 2 breaths, phone 911, and then resume sets of 30:2

Positions for 6-Person High-Performance Teams*

Resuscitation Triangle Roles



Compressor

- Assesses the patient
- Performs compressions according to local protocols
- Rotates every 2 minutes or earlier if fatigued



Monitor/Defibrillator/ CPR Coach

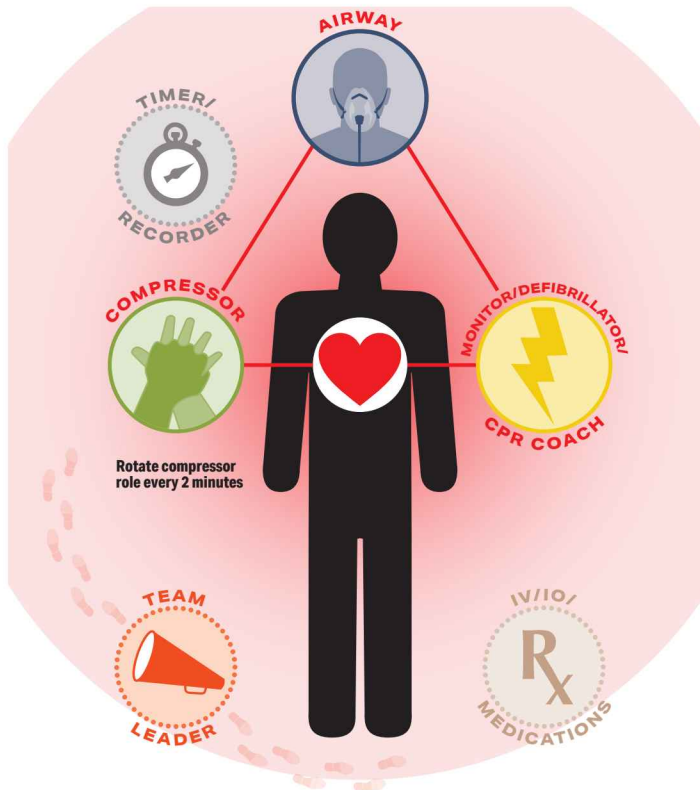
- Brings and operates the AED/monitor/defibrillator and acts as the CPR Coach if designated
- If a monitor is present, places it in position where it can be seen by the Team Leader (and most of the team)



Airway

- Opens the airway
- Provides bag-mask ventilation
- Inserts airway adjuncts as appropriate†

The team owns the code. No team member leaves the triangle except to rotate compressors or to protect his or her safety.



Leadership Roles



Team Leader

- **Every resuscitation team must have a defined leader**
- Assigns roles to team members
- Makes treatment decision†
- Provides feedback to the rest of the team as needed
- Assumes responsibility for roles not defined



IV/IO/Medications†

- An ALS provider role
- Initiates IV/IO access
- Administer medications



Timer/Recorder

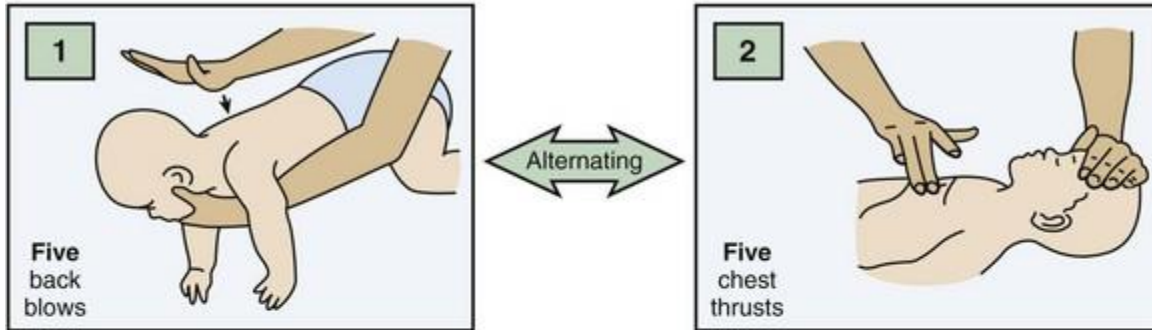
- Records the time of interventions and medications (and announces when these are next due)
- Records the frequency and duration of interruptions in compressions
- Communicates these to the Team Leader (and the rest of the team)

*This is a suggested team formation. Roles may be adapted to local protocol.
†Roles and tasks are performed by advanced providers.

FOREIGN BODY AIRWAY OBSTRUCTION

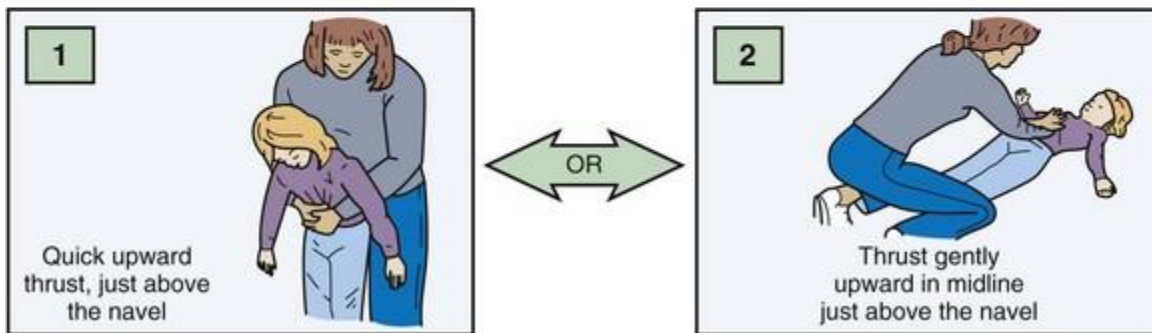
A

INFANT CHOKING



A

CHILD CHOKING



B

Heimlich Maneuver

1. Lean the person forward slightly and stand behind him or her.
2. Make a fist with one hand.
3. Put your arms around the person and grasp your fist with your other hand near the top of the stomach, just below the center of the rib cage.
4. Make a quick, hard movement, inward and upward.

Place the infant stomach-down across your forearm and give five thumps on the infant's back with heel of your hand

ADAM

Place fist above navel while grasping fist with other hand. Leaning over a chair or counter-top, drive your fist towards yourself with an upward thrust

ADAM

Copyright © 2005 McGraw-Hill Education and/or one of its subsidiaries. All Rights Reserved.