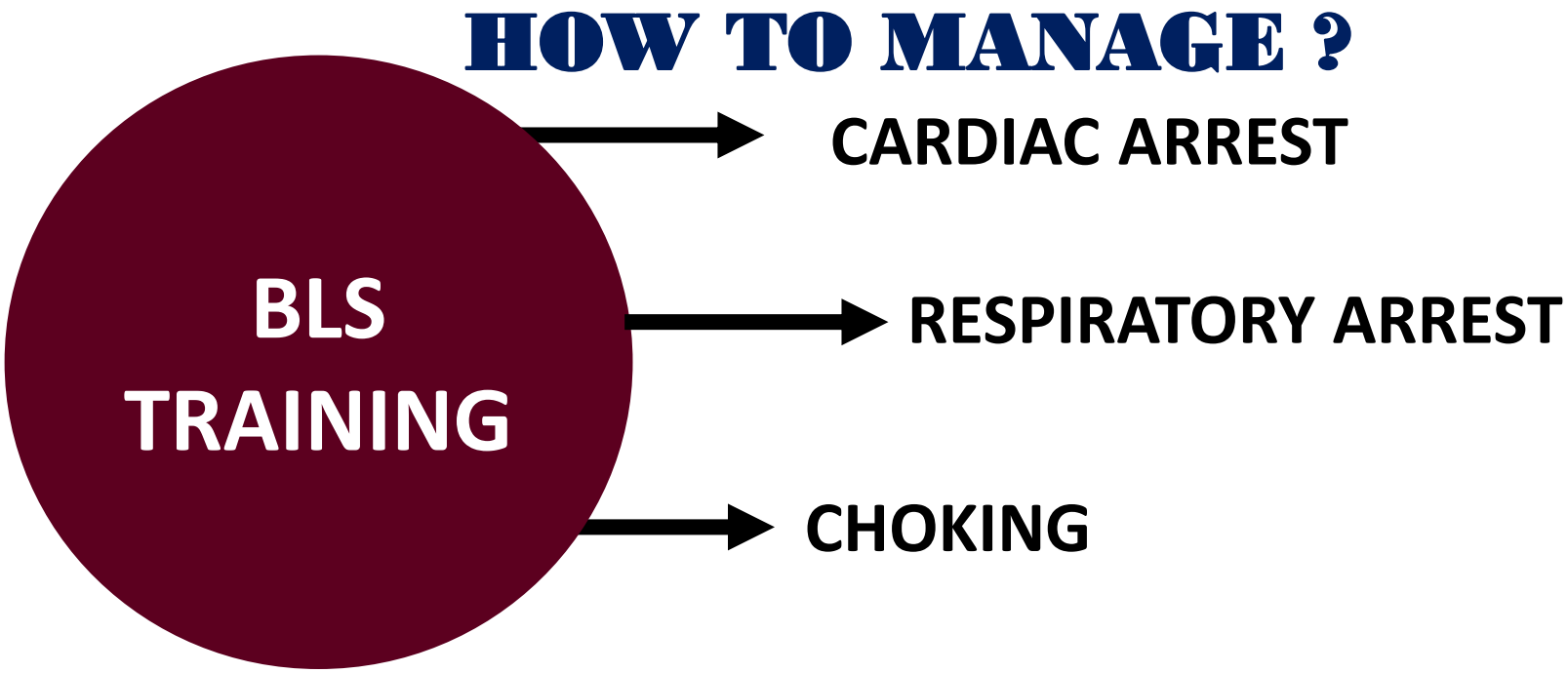
BASIC LIFE SUPPORT

Basic life support is a level of medical care which is used for victims o
Life-threatening illnesses or injuries until they can be given full medic
Care at a hospital. It can be provided by trained medical personnel,
Such as emergency medical technicians, and by qualified bystanders

TOPICS



Age Groups : INFANT, CHILD, ADULT

CARDIAC ARREST (CA)

Cardiac arrest is the loss of heart's ability to pump blood through the body. Cardiac arrest can happen anywhere with little or no warming.

SUDDEN CARDIAC ARREST (SCA)

Sudden cardiac arrest (SCA) can happen with little or no warning

Victims unexpectedly collapse

- Breathing stops

Occurs when electrical pulses in heart become disorganized

- Ventricular fibrillation occurs
- Blood flow with oxygen it carries stops
- Brain cell death starts

BLS ASSESSMENT

Ensure Scene Safety

Check responsiveness

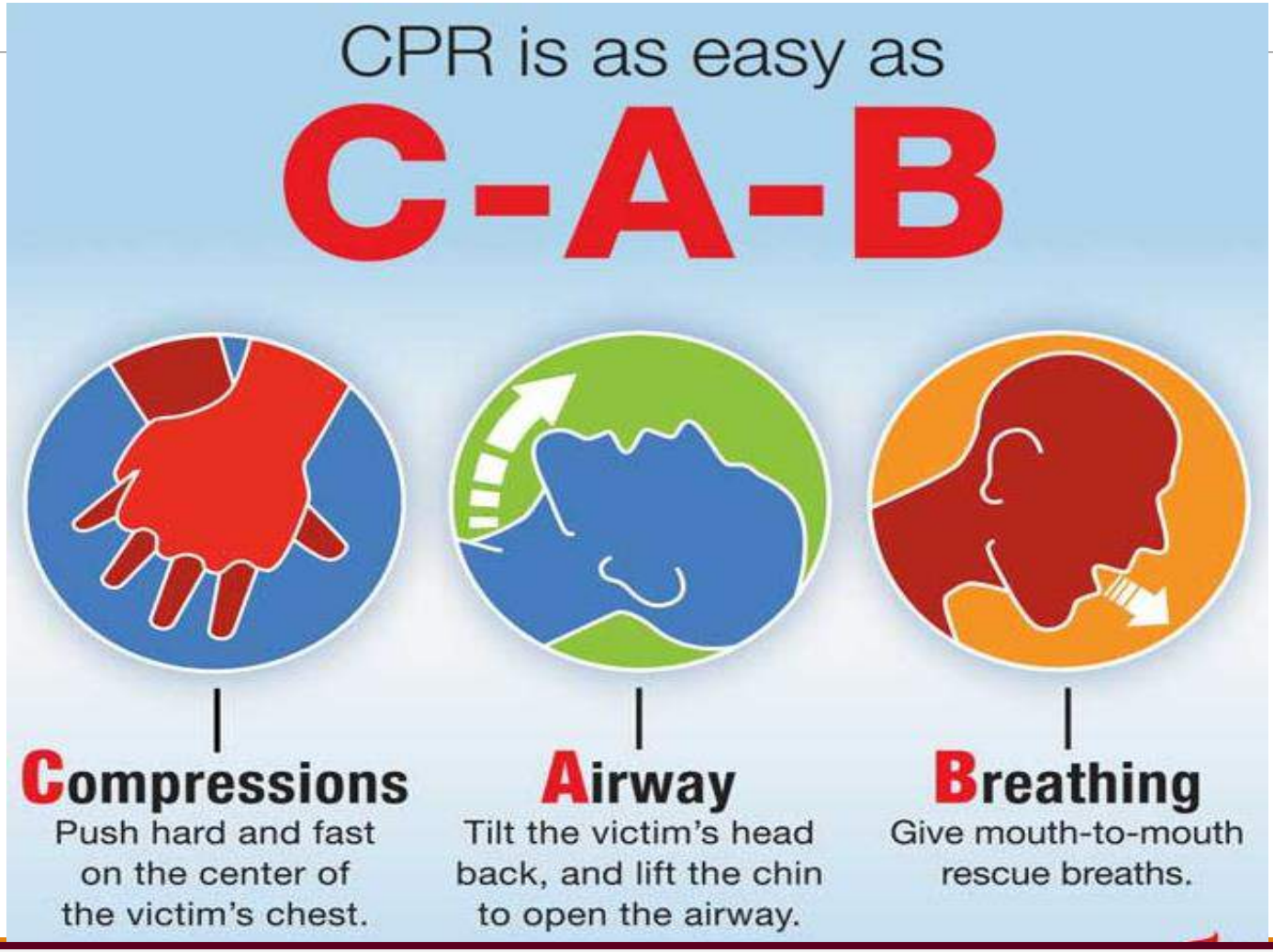
Call for help

Check pulse and breathing

Activate EMS (If cardiac arrest suspected)

START CPR

CPR SEQUENCE



CARDIOPULMONARY RESUSCITATION (CPR)

Critical Concepts

Start Compression within 10 seconds of cardiac arrest confirmation

Compression rate – 100 to 120 /mints

Depth (Adult) => At least 5 cm

(Child) => About 5cm

(Infant) => About 4 cm

Allow chest recoil after each compression

Limit chest compression interruption less than 10 seconds

Give effective breath that make chest rise (Avoid Hyperventilation)

CARDIOPULMONARY RESUSCITATION (CPR)

Compressions to breaths ratio

- Adult: 30:2 (1&2 rescuers)
- Child : 30:2 (1 rescuer) 15:2 (if 2 or more rescuers)
- Infant : 30:2 (1 rescuer) 15:2 (if 2 or more rescuers)

Chest compression technique

Adult & Child

Infant

CARDIOPULMONARY RESUSCITATION (CPR)

Critical Concepts

Airway Opening Method

- Head Tilt - Chin Lift (in Adult)
- Jaw Thrust (is suspected head or spine injury)
- Infant (neutral Position)

Ventilation Technique

- Mouth to Mouth method (least preferred)
- Pocket Mask method
- Bag Mask Device (Preferred in 2 rescuers CPR)

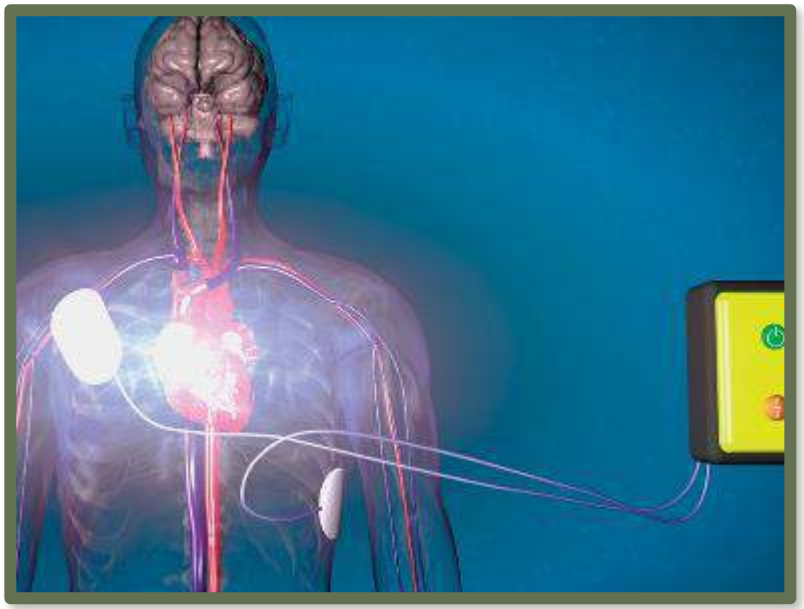
DEFIBRILLATION

The most effective way to end fibrillation is defibrillation

Shock is sent through heart muscle to stop ventricular fibrillation, allowing normal activity to return

Success dependent on how quickly defibrillation occurs

- Each minute in cardiac arrest, chance of survival declines by ~10%
- After as few as 10 minutes, survival is unlikely



DEFIBRILLATION

In Basic Life Support Automated External Defibrillator (AED is Preferred)

It is simple to operate allowing laypersons and health care providers to attempt defibrillation safely.

DEFIBRILLATION

AED operating steps

Figure 21. Power on the AED.

Figure 22. The rescuer attaches AED pads to the victim and then attaches the electrodes to the AED.

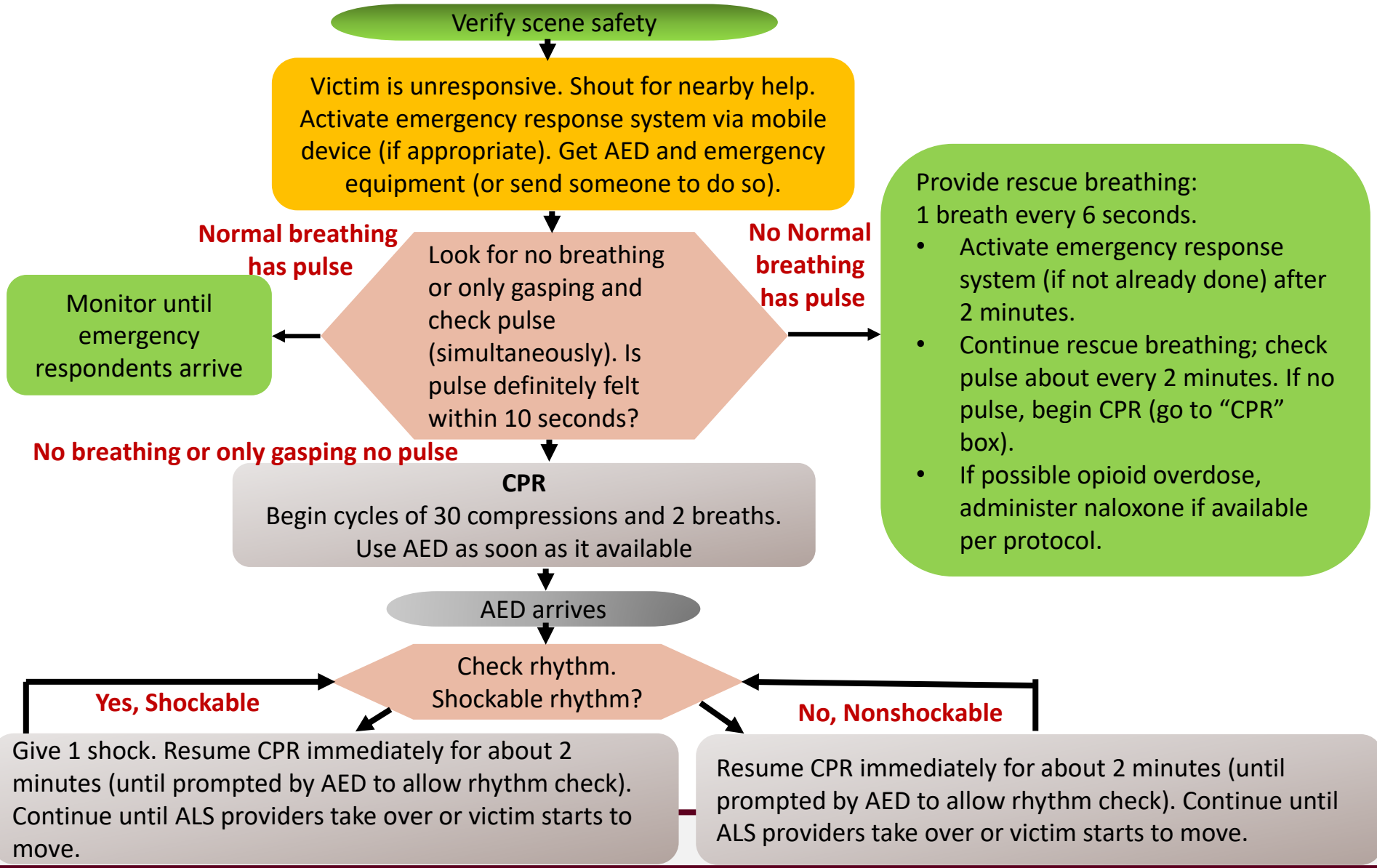
Figure 23. The AED operator clears the victim before rhythm analysis. If needed, the AED operator then activates the analyze feature of the AED.

A B

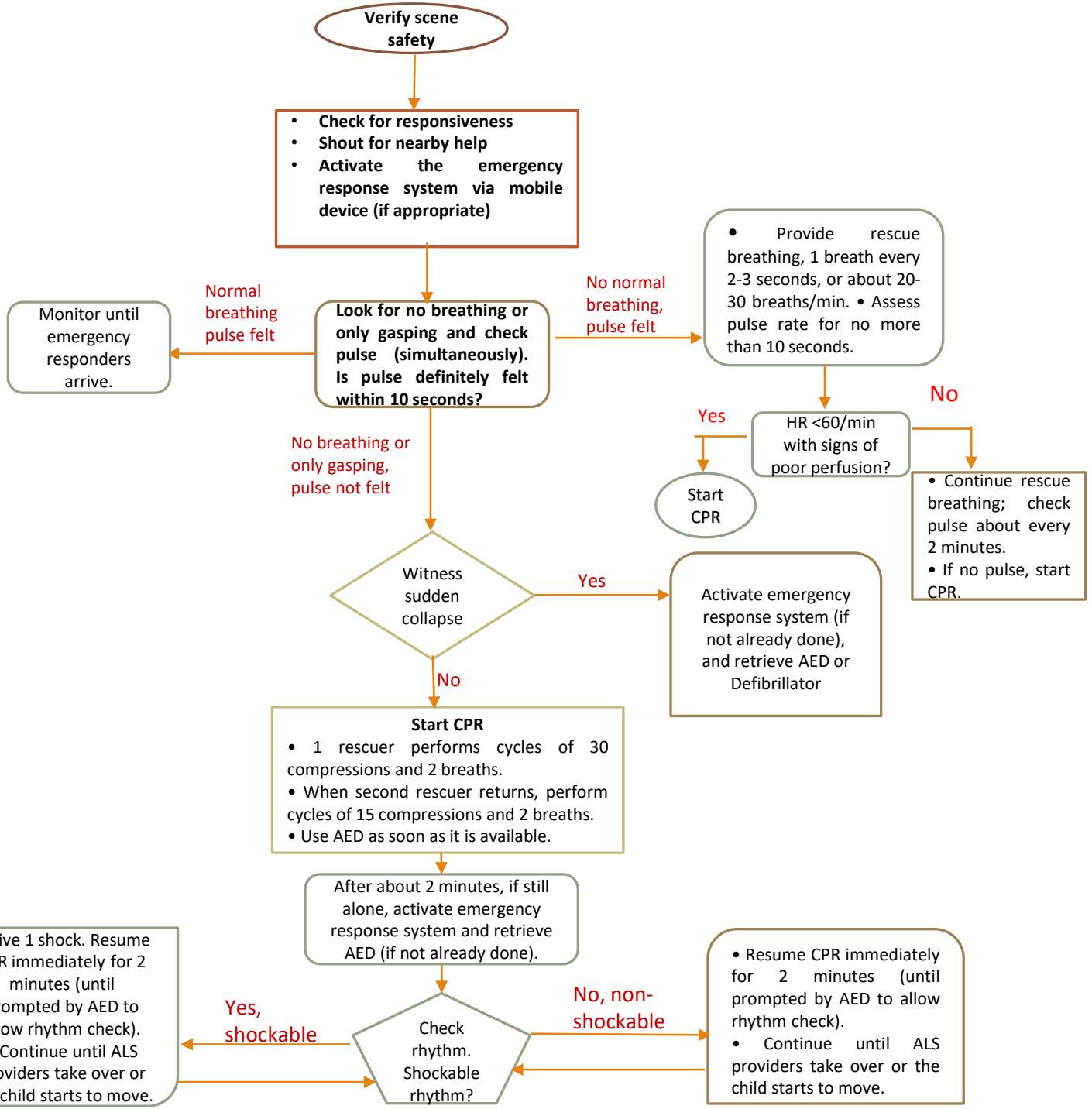
Figure 24. A, The AED operator clears the victim before delivering a shock. **B,** When everyone is clear of the victim, the AED operator presses the shock button.

Figure 25. If no shock is indicated and immediately after any shock delivered, rescuers start CPR, beginning with chest compressions.

ADULT CARDIAC ARREST ALGORITHM



PEDIATRIC BASIC LIFE SUPPORT ALGORITHM FOR HEALTHCARE PROVIDERS



CARING FOR RESPIRATORY ARREST

ADULT/ CHILD/ INFANT

ASSESS

1. If safe, tap or squeeze shoulder. Ask loudly, “Are you all right” No response!
2. Check face and chest for normal breathing. Check pulse at same time. No breathing absent! Pulse present!
3. Activate emergency response protocol to get additional help and an AED.

ESTABLISH AN AIRWAY

1. Use head tilt- chin lift or jaw thrust to open airway
2. If suspect neck injury, use jaw thrust without head tilt

GIVE RESCUE BREATH

CHILD AND INFANT: Provide 1 rescue breath every 2-3 seconds

ADULT :

- Provide 1 rescue breath every 6 seconds
- Give each breath over 1 second; make chest visibility rise with each breath but no more
- Reassess pulse every 2 minutes, taking no longer than 10 seconds to do so.
- Continue until another BLS provider takes over the person shows signs of life or you are too exhausted to continue

CHOKING

Early recognition of foreign- body airway obstruction is the key successful outcome. It is important to distinguish this emergency from other conditions that may cause sudden respiratory distress.

SIGNS OF CHOKING

MID AIRWAY OBSTRUCTION

1. **Good air exchange**
2. **Can cough forcefully**
3. **May Wheeze between coughs**

SEVERE AIRWAY OBSTRUCTION

1. Making universal choking sign
2. Unable to speak or cry
3. Poor or no air exchange
4. Weak, ineffective cough or no cough at all
5. Increased respiratory difficulty
6. Possible cyanosis (turning blue)

CHOKING RELIEF IN A RESPONSIVE ADULT OR CHILD

Figure 41. Abdominal thrusts with the victim standing.

Abdominal Thrusts

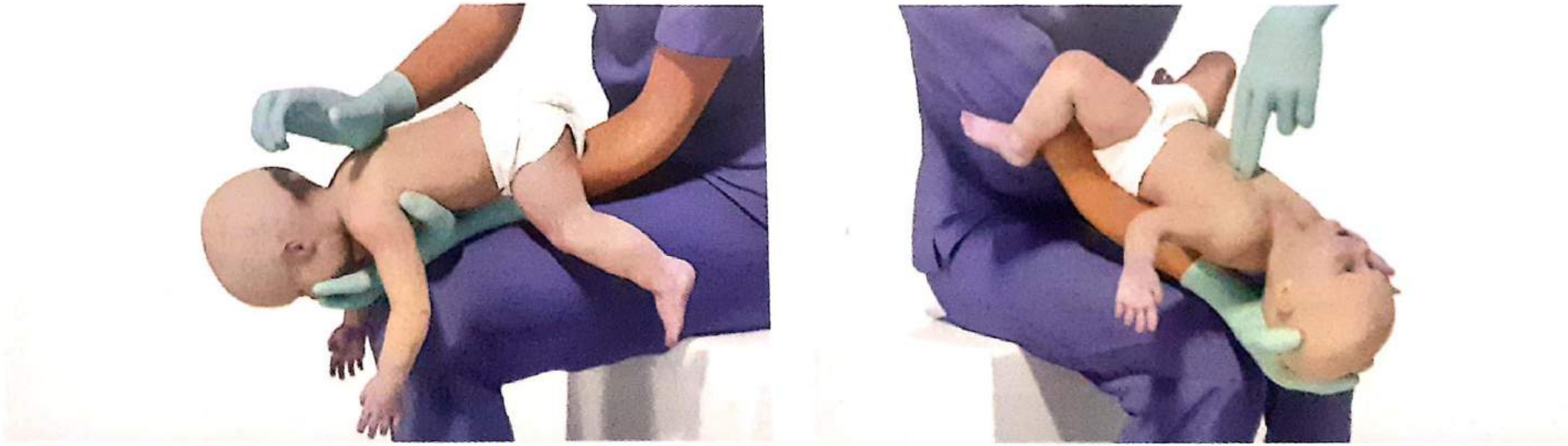
Figure 42. Perform chest thrusts instead of abdominal thrusts in a pregnant or obese choking victim.

Chest Thrusts if pregnant or Obese

CHOKING RELIEF IN A UNRESPONSIVE ADULT OR CHILD

If victim become unresponsive begin CPR with 1 extra step (Each time you open the Airway look for the object in the throat. If anything present and can easily remove it, remove it and continue BLS

CHOKING RELIEF IN RESPONSIVE INFANT



A B

Figure 43. Relief of choking in an infant. **A,** Back slaps. **B,** Chest thrusts.

FIVE BACK SLAPS & FIVE CHEST THRUSTS

CHOKING RELIEF IN UNRESPONSIVE INFANT

If infant victims becomes unresponsive

- **Start CPR with one extra step (each time you open the airway look for the object in the throat)**
- **If any object present and can easily remove it and continue BLS**

BLS Key Points (All options under each question are correct answers)

1. In an emergency situation as a health care provider our primary concern is
    - Scene Safety
2. How to confirm cardiac arrest?
    - Unresponsive, pulse and breath are absent
    - Unresponsive, pulse absent with agonal gasping
    - Gasping is a sign of cardiac arrest if pulse is absent
3. BLS Assessment Steps
    - Scene Safety
    - Check response
    - If no response, call for help.
    - Check pulse and breath (5-10 seconds)
    - If no pulse and breath or no pulse with gasping, Activate EMS
    - Start CPR
4. CPR Steps?
    - C- Chest Compression
    - A- Airway Opening
    - B- Breath
5. Compression ventilation ratio for adult or 2 rescue CPR without Advanced Airway (ET Tube) is
    - 30:2
6. In 2 or more rescuers CPR how often the chest compression person should change?
    - In every 2minutes (5 cycles of CPR)
7. What is the compression rate (speed) for adult, child and infant CPR?
    - 100-200 per minute
8. If there is 5 rescuers, when will you switch the compressor?
    - In every 2 minutes (5 cycles of CPR)
9. What is the first step to operate AED
    - Switch on (Power on)
10. Best key point to follow while operating AED
    - Always follow voice prompt (voice instruction)

11. After delivering shock with an AED in cardiac arrest management, what should be your immediate step?
    - Start CPR
12. Special situations / considerations while using AED
    - Wipe the water from the patient's body
    - Shave the chest hair before applying AED pads
    - Remove medication patches from chest
    - Avoid applying AED pads above implants (example: pacemaker)
    - If any technical error to AED, continue CPR
13. Compression ventilation ratio for 1 rescuer child CPR
    - 30:2
14. Compression ventilation ratio for 2 rescuer child CPR
    - 15:2
15. Compression depth for adult CPR
    - At least 5cm (2inch) not more than 6cm (2.4inch)
16. Compression depth for child CPR
    - At least 1/3 of the depth of chest
    - About 5cm (about 2inch)
17. Compression depth for infant CPR
    - At least 1/3 of the depth of the chest
    - About 4cm (about 1 ½ inch)
18. Compression ventilation ratio for 1 rescuer infant CPR
    - 30:2
19. Compression ventilation ratio for 2 rescuer infant CPR
    - 15:2
20. Respiratory arrest management for adult
    - 1 breath in every 6 seconds
21. Respiratory arrest management for child and infant
    - 1 breath in every 2-3 seconds
22. Choking management for adult and child if victim is conscious
    - Abdominal thrust
23. Choking management for adult and child if victim is unconscious
    - CPR with modification (Open airway and check for foreign body before giving breath)

24. Choking management for infant, if baby is conscious
    - 5 back slaps and 5 chest thrust
25. Choking management for infant, if baby is unconscious
    - CPR with modification (Open the airway and look for foreign body before giving breath)

QUALITIES FOR A GOOD TEAM WORK / TEAM DYNAMICS

1. Clear roles and responsibilities
    - All team members should know their jobs and responsibilities thereby we can avoid inefficiencies and the team functions more smoothly
2. Know your limitations
    - All team members should know your own limitations (boundaries / scope of practice), and ask for help if situation starts worse or difficult to manage
3. Constructive Intervention
    - If any team members do any inappropriate or incorrect action, it is necessary to intervene in a constructive respectful way and let them correct their mistake
4. Knowledge share
    - Sharing knowledge will help to treat your patient more effectively
5. Closed loop communication
    - This technique helps to prevent treatment errors, that is if any one give a message, the receiver repeat it back
6. Clear message
    - Gives clear, concise used languages
7. Mutual respect
    - Display / maintain mutual respect
8. Summarize and re-evaluate
    - Provide an original record for treatment