

DEPARTMENT OF HEALTH
Health Emergency Management Bureau



BASIC LIFE SUPPORT TRAINING

PARTICIPANT'S WORKBOOK

2022 Edition

FOREWORD

The DOH Basic Life Support Training Course is categorized into two: BLS Training for Healthcare Providers and BLS Training for Lay Rescuers. This workbook was prepared for the participants of both training categories. The contents are basically highlights of important things to remember from the modules of the course.

The participant's workbook has been designed to facilitate the learning and understanding of the topics presented in the modules. The workbook has "fill-in" information for the participants to answer while the lecture-discussion is on going. This will later serve as a trainee's notes and reviewer.

**THE DEPARTMENT OF HEALTH
Health Emergency Management Bureau**

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HEALTH EMERGENCY MANAGEMENT BUREAU

VISION

Health Disaster Safety in the Hands of the Community a.k.a.
"Kaligtasang pang-Kalusugan sa Kalamidad sa Kamay ng Komunidad (5K)"

MISSION

To support community health resilience building.

GOAL

1. Guarantee uninterrupted health service delivery during emergencies and disasters;
2. Avert preventable morbidities, mortalities and other health effects secondary to emergencies and disasters; and
3. Ensure no outbreaks secondary to emergencies and disasters.

POLICY DIRECTION

To institutionalize Disaster Risk Reduction Management for Health (DRRM-H) at all levels.

STRATEGIC OBJECTIVES

1. To strengthen HEMB capacity to sustain its continued relevance in DRRM.
2. To enhance RO's capacity to support LGU's disaster resilience building .
3. To scale up the Hospital capacity to manage health risks of disasters.
4. To build the capacity of LGU to institutionalize DRRM-H.
5. To develop capacity of community/family to prepare, respond and cope with emergencies and disasters.

LEGAL BASES IN THE CONDUCT OF BASIC LIFE SUPPORT TRAINING

1. Administrative Order (A.O.) 155 s. 2004, Section VI Implementing Guidelines —
"The Basic Life Support (BLS) Training is mandatory to all health workers"
2. Republic Act 10871 "Basic Life Support Training in Schools Act"

SESSION I (Part A)

PRINCIPLES OF EMERGENCY CARE

GETTING STARTED

1. _____. Emergency plans should be established based on anticipated needs and available resources
2. _____. The emergency response begins with the preparation of equipment and personnel before any emergency occurs
3. *Remember the initial response as follows:*
 - Ask for help
 - Intervene
 - Do not do further harm
4. _____. Proper information and instruction to a helper/s would provide organized first aid care.

EMERGENCY ACTION PRINCIPLES

1. _____. Once you recognized that an emergency has occurred and decide to act, you must make sure that the scene of the emergency is safe for you, the victim/s, and the bystander/s.
Take time to survey the scene and answer these questions:
 - Is the scene safe?
 - What happened? Nature of incident
 - How many people are injured?
 - Are there bystanders who can help?
 - Then identify yourself as a trained first aider.
 - Get consent to give care.
2. _____. In some emergencies, you will have enough time to call for specific medical advice before administering first aid. But in some situations, you will need to attend to the victim first.

- **Call First and CPR First.** Both trained and untrained bystanders should be instructed to Activate Medical Assistance as soon as they have determined that an adult victim requires emergency care.

CALL FIRST	CPR FIRST
<ul style="list-style-type: none">• Adults and Adolescents• Witnessed collapse of children and infants	<ul style="list-style-type: none">• Adults and Adolescents with likely asphyxial arrest (e.g. drowning)• Unwitnessed collapse of children and infants
<ul style="list-style-type: none">• If you are alone with no mobile phone, leave the victim to activate emergency response system and get AED/emergency equipment before beginning CPR• Otherwise, send someone and begin CPR immediately; use the AED as soon as it is available	<ol style="list-style-type: none">1. Give 2 minutes (5 cycles) of CPR2. Leave the victim to activate emergency response system and get the AED3. Return to the child or infant and resume CPR; use the AED as soon as it is available

- Use of Social Media to Summon Rescuers.
- Use of Mobile Phone in Activation of Emergency Medical Service (EMS).
- Information to be remembered in activating medical assistance:
 - What happened?
 - Location?
 - Number of persons injured?
 - Extent of injury and first aid given?
 - The telephone number from where you are calling?
 - Person who activated medical assistance must identify him/herself and drop the phone last.

3. _____ In every emergency situation, you must first find out if there are conditions that are immediate threat to the victim's life.

Check for _____, activate medical assistance and check for

4. _____ It is a systematic method of gathering additional information about the injuries or conditions that may need care.

4.1 Interview the victim

S– signs and symptoms
A– allergies
M– medications
P– past medical history
L– last meal taken
E– events prior to injury

4.2 Check vital signs

Every 15 minutes for stable condition and every 5 minutes if unstable.

4.3 Head-to-toe examination

D– deformity
C– contusion
A– abrasion
P– puncture
B– burn
T– tenderness
L– laceration
S– swelling

SESSION I (Part B)

INTRODUCTION TO BASIC LIFE SUPPORT (BLS)

Three Kinds of Life Support

1. _____. A set of emergency procedures that consist of recognizing respiratory or cardiac arrest and the proper application of Cardio-Pulmonary Resuscitation (CPR) with or w/o Automated External Defibrillation (AED) or Foreign Body Airway Obstruction Management (FBAOM) and Rescue Breathing (RB) or to maintain life until a victim recovers or advanced life support is available.
2. _____. A set of clinical interventions for the urgent treatment of cardiac arrest and other life threatening emergencies, as well as the knowledge and skills to deploy those interventions.
3. _____. For post resuscitative and long term resuscitation with the use of adjunctive equipment such as ventilator, cardiac monitor, pulse oximeter etc.

Out of Hospital Cardiac Arrest (OHCA) Adult Chain of Survival



The **FIRST LINK:** _____

Lay rescuers must recognize the patient's arrest and call for help. If the victim is unresponsive with absent or abnormal breathing, the rescuer should assume that the victim is in cardiac arrest. Rescuers can activate an emergency response (ie, through use of a mobile telephone) without leaving the victim's side.

The **SECOND LINK:** _____

If the lay rescuer finds an unresponsive victim is not breathing or not breathing normally (e.g., gasping), high quality CPR shall be started immediately. The probability of survival approximately doubles when it is initiated before the arrival of EMS.

The **THIRD LINK:** _____

It is recommended that public access defibrillation (PAD) programs be implemented in communities with individuals at risk for OHCA. This would enable bystanders to retrieve nearby AEDs and use it when OHCA occurs.

The **FOURTH LINK:** _____

If provided by highly trained personnel like Emergency Medical Technicians EMTs and paramedics, provision of advanced care outside the hospital would be possible.

The **FIFTH LINK:** _____

Post cardiac arrest care after return of spontaneous circulation (ROSC) can improve the likelihood of patient survival with good quality of life.

The **SIXTH LINK:** _____ this includes discharge from healthcare facility and rehabilitation at home

In-Hospital Cardiac Arrest (IHCA) Adult Chain of Survival



The **FIRST LINK:** _____

Patients with IHCA depend on a system of appropriate surveillance and prevention of cardiac arrest, which is represented by a magnifying glass in the first link.

The **SECOND LINK:** _____

When cardiac arrest occurs, prompt notification and response to a cardiac arrest should result in the smooth interaction of a multidisciplinary team of professional providers, including physicians, nurses, respiratory therapists, and others.

The **THIRD LINK:** _____

Chest compression fraction (the percent of total resuscitation time spent compressing the chest), chest compression quality (rate, depth, and chest recoil), and ventilation rate are fundamental metrics defining high-quality CPR.

The **FOURTH LINK:** _____

It is the cornerstone therapy for patients who suffered cardiac arrest probably due to ventricular fibrillation and pulse-less ventricular tachycardia.

The **FIFTH LINK:** _____

Comprehensive post-cardiac arrest care requires optimization of hemodynamics, treatment and reversal of precipitating factors, and targeted temperature management.

The **SIXTH LINK** _____ This includes discharge from health facility and rehabilitation at home

PEDIATRIC CHAIN OF SURVIVAL



The **FIRST LINK:** _____

In children, the leading cause of death is injury, and vehicular accidents are the most common causes of fatal childhood injuries and child passenger's safety seats can reduce the risk of death.

The **SECOND LINK:** _____

It is most effective when started immediately after the victim's collapse. The probability of survival approximately double when it is initiated before the arrival of EMS. It is associated with successful return of spontaneous circulation and neurologically intact survival in children.

The **THIRD LINK:** _____

It is the event initiated after the baby collapse to recognize that the victim has experienced a cardiac arrest until the arrival of Emergency Medical Services personnel prepared to provide care.

The **FOURTH LINK:** _____

Initial steps in stabilization provide warmth by placing baby under a radiant heat source, position head in a "sniffing" position to open the airway, clear airway with bulb syringe or suction catheter, dry baby and stimulate breathing.

The **FIFTH LINK:** _____

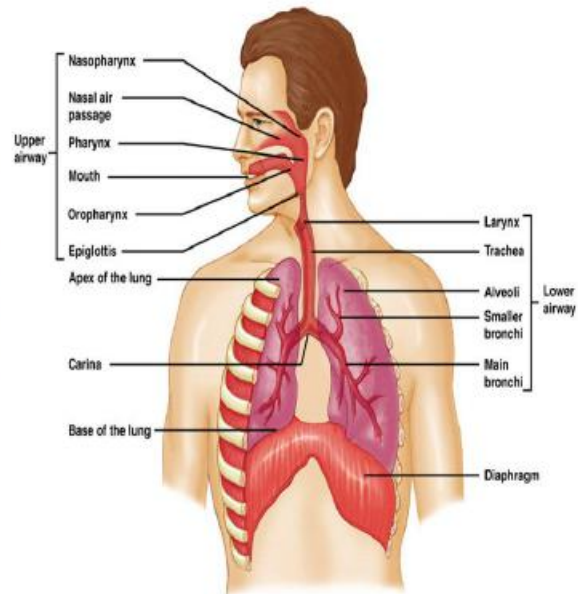
Post cardiac arrest after return of spontaneous circulation (ROSC) can improve the likelihood of patient survival with good quality of life.

The **SIXTH LINK** _____ this includes discharge from health facility and Rehabilitation at home.

BODY SYSTEMS

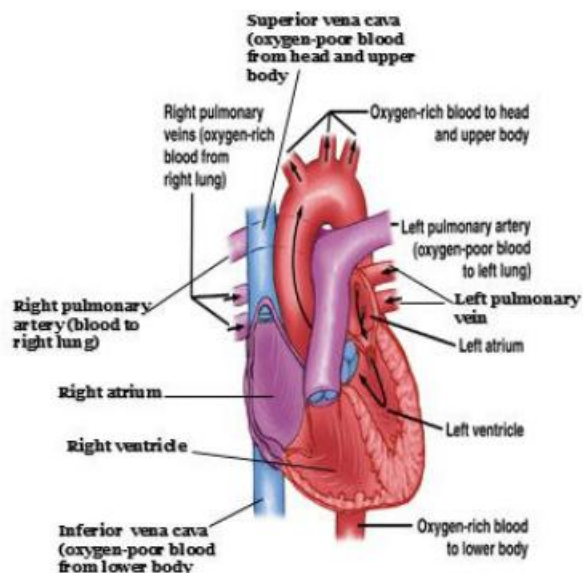
The Respiratory System

It delivers oxygen to the body, as well as removes carbon dioxide from the body. The passage of air into and out of the lungs is called respiration. Breathing in is called inspiration or inhalation. Breathing out is called expiration or exhalation.



The Circulatory System

It delivers oxygen and nutrients to the body's tissues and removes waste products. It consists of the heart, blood vessels, and blood.



Breathing and Circulation

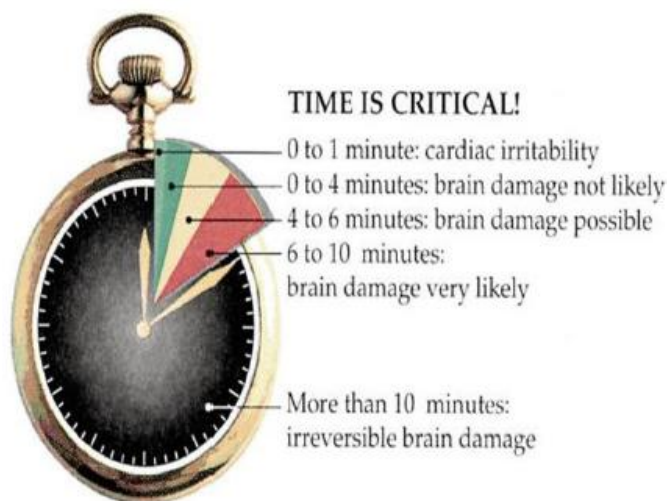
1. Air that enters the lungs contains about _____% oxygen and only a trace of carbon dioxide. Air that is exhaled from the lungs contains about _____ oxygen and _____% carbon dioxide.
2. The right side of the heart pumps blood to the lungs, where blood picks up oxygen and releases carbon dioxide.
3. The oxygenated blood then returns to the left side of the heart, where it is pumped to the tissues of the body.
4. In the body tissues, blood releases oxygen and takes up carbon dioxide after which it flows back to the right side of the heart.
5. All body tissues require oxygen, but the brain requires more than any other tissue.

***Clinical death**

- 0 - 1 min. - cardiac irritability
- 0 - 4 min. - brain damaged not likely
- 4 - 6 min. - brain damage possible

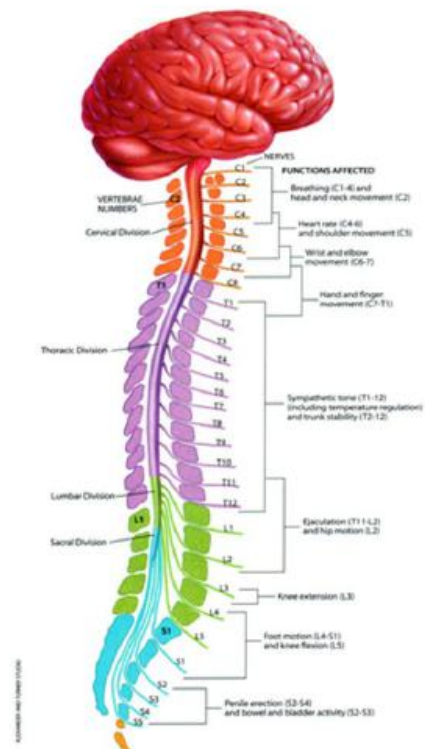
***Biological death**

- 6 - 10 min. - brain damaged very likely
- More than 10 min. - irreversible brain damaged



The Nervous System

It is composed of the brain, spinal cord and nerves. It has two major functions – communication and control. It lets a person be aware of and react to the environment. It coordinates the body's responses to stimuli and keeps body systems working together.



SESSION II (Part A)

CARDIOPULMONARY RESUSCITATION (CPR)

CPR is a series of assessments and interventions using techniques and maneuvers made to bring victims of cardiac and respiratory arrest back to life.

_____. Is the condition in which circulation ceases and vital organs are deprived of oxygen.

THREE CONDITIONS OF CARDIAC ARREST

Cardio Vascular Collapse. The heart is still beating but its action is so weak that blood is not being circulated through the vascular system to the brain body tissues.

Ventricular Fibrillation. Occurs when the individual fascicles of the heart beat independently rather than the coordinated, synchronized manner that produce rhythmic heart beat.

Cardiac Standstill. It means that the heart has stopped beating.

WHEN TO START CPR

If you see a victim who is:

1. Unconscious/Unresponsive
2. Not breathing or has no normal breathing (only gasping)
3. No definite pulse

WHEN NOT TO START CPR

All victims of cardiac arrest should receive CPR unless:

1. Patient has a valid DNAR (Do Not Attempt Resuscitation) order.
2. Patient has signs of irreversible death (Rigor Mortis, Decapitation, Dependent Lividity).
3. No physiological benefit can be expected because the vital functions have deteriorated as in septic or cardiogenic shock.
4. Confirmed gestation of < 23 weeks or birth weight < 400 grams, anencephaly. (between 37- 41 weeks, 2700 - 4000 grams)
5. Attempts to perform CPR would place the rescuer at risk of physical injury.

WHEN TO STOP CPR

S — SPONTANEOUS signs of circulation are restored

T — TURNED over to medical services or properly trained and authorized personnel

O — OPERATOR is already exhausted and cannot continue CPR

P — PHYSICIAN assumes responsibility (declares death, takes over, etc.)

S — SCENE becomes unsafe (such as traffic, impending or ongoing violence —gun fires, etc)

S — SIGNED waiver to stop CPR

COMPRESSION ONLY-CPR

If a person cannot perform mouth-to-mouth ventilation for an adult victim, chest compression only - CPR should be provided rather than no attempt of CPR being made.

Chest compression only - CPR is recommended only in the following circumstances:

1. When a rescuer is unwilling or unable to perform mouth-to-mouth rescue breathing , or
2. For use in dispatcher-assisted CPR instructions where the simplicity of this modified technique allow untrained bystanders to rapidly intervene.

The **Compression-Airway-Breathing (C-A-B)**

- Early CPR improves the likelihood of survival.
- Chest Compressions are the foundations of CPR.
- Compressions create blood flow by increasing intra-thoracic pressure and directly compress the heart; generate blood flow and oxygen delivery to the myocardium and brain.

CAB: COMPRESSION

- CIRCULATION represents a heart that is actively pumping blood, most often recognized by the presence of a pulse in the neck
- Assume there is no CIRCULATION if the following exist: (1)Unresponsive, (2) Not breathing, (3) Not moving and (4) Poor skin color
- ROSC-Return of Spontaneous Circulation-sign of life

ADULT CPR

- Kneel facing the victim's chest
- Place the heel of one hand on the center of the chest
- Place the heel of the second hand on top of the first so that the hands are overlapped and parallel

CHILD CPR

- Lower half of the sternum, between the nipples
- One hand only/ two hands
- 30:2 for single rescuer, 15:2 for 2-man rescuer (optional for HCP)

INFANT CPR

- Just below the nipple line, lower half of sternum
- Two fingers, flexing at the wrist (lone rescuer)
- 2 thumb-encircling hands technique (two rescuers)

CAB: Open AIRWAY

- This must be done to ensure an open passage for spontaneous breathing OR mouth to mouth during CPR.
- *Head-Tilt/Chin-Lift Maneuver*
Tilt the head back with your one hand and lift up the chin with your other hand.
- *Jaw-Thrust Maneuver*
is strictly a Healthcare Provider technique and not for Lay Rescuers (if suspected with cervical trauma)

CAB: BREATHING

- Maintain open airway
- Pinch nose shut (if mouth to mouth RB is preferred)
- Open your mouth wide, take a normal breath, and make a tight seal around outside of victim's mouth
- Give 2 full breaths (1 sec each breath)
- Observe chest rise
- 30:2 (Compression to Ventilation ratio)
- 5 cycles or 2 minutes

BASIC LIFE SUPPORT SEQUENCE

1. Verify Scene Safety

- Survey for scene safety first
- Make sure the environment is safe for rescuers and victim
- Observe standard precautions (wear personal protective equipment)

2. Introduce Yourself

- Make sure to introduce yourself first before engaging with the victim.
- "I'm _____. I know CPR. I can help."

3. Check for Responsiveness

- Check for responsiveness by tapping the victim and ask loudly, "Are you OK?"
- ADULT, ADOLESCENTS and CHILD BLS
 - Tap the shoulders
- INFANT BLS
 - Tap the sole of the feet

4. Activate Emergency Response System (EMS)

- Shout for nearby help.
- Activate EMS via mobile phone or phone patch (if available).
- Send someone to do so.
- If you are alone with no mobile phone, leave the victim to activate the EMS, and get the AED (if available) before beginning CPR.

5. Recognition of Cardiac Arrest

- Unresponsive.
- No breathing or only gasping.
- No pulse.

** Check for breathing and pulse simultaneously for no more than 10 seconds.

⇒ HOW TO CHECK FOR BREATHING

Observe for chest rise.

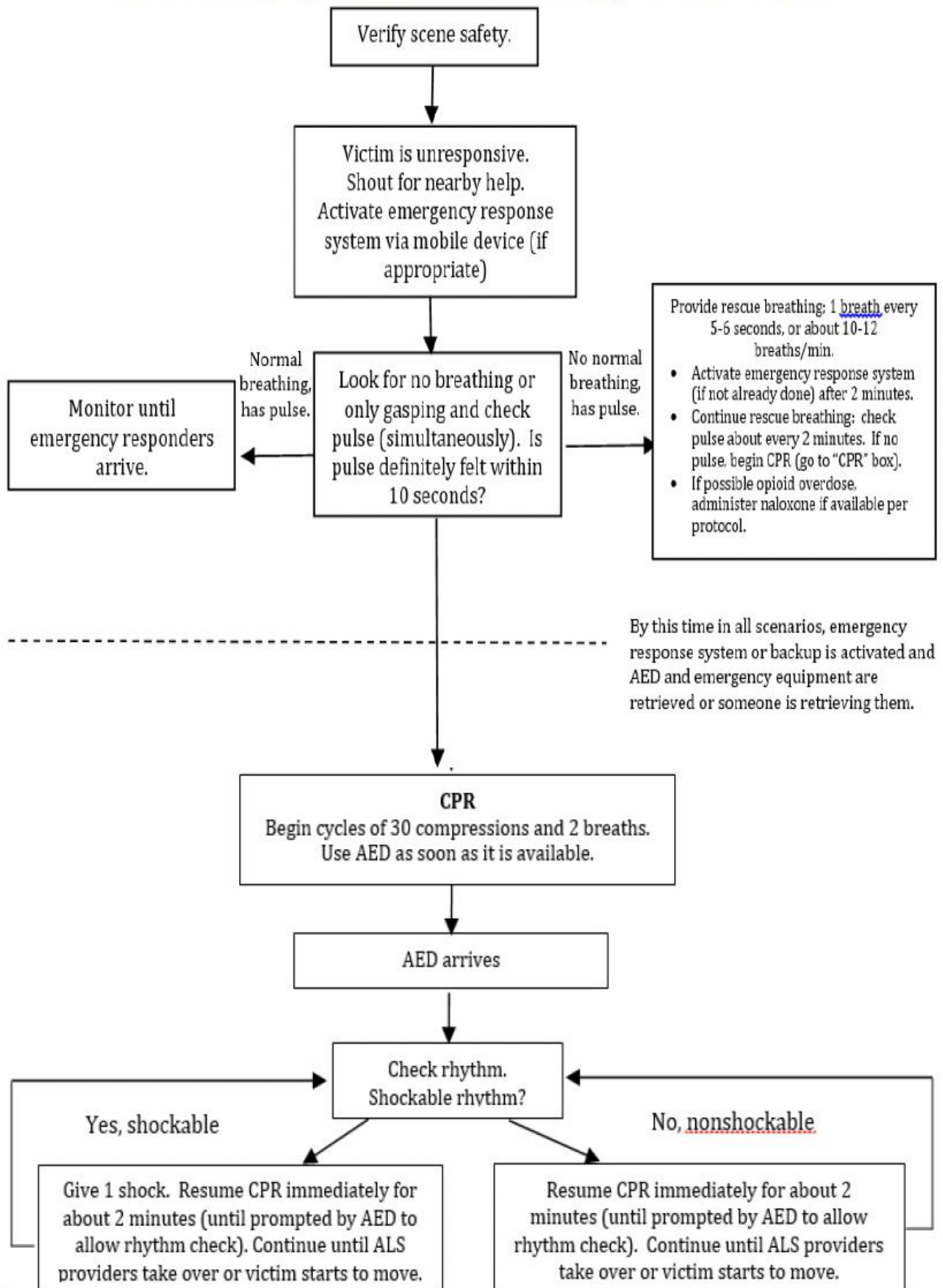
Distinguish between normal breathing from no normal breathing (only gasping).

⇒ HOW TO CHECK FOR PULSE

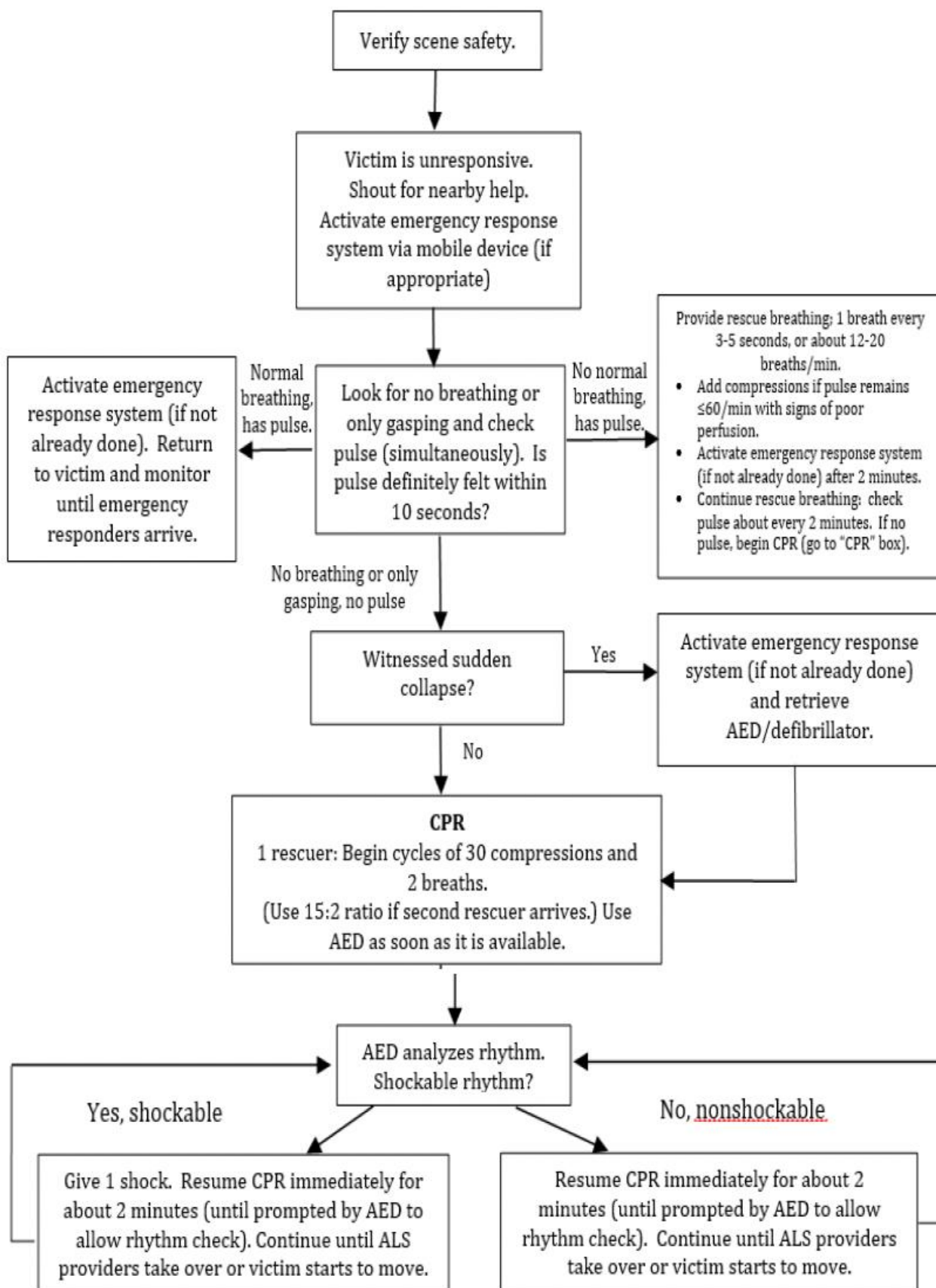
- Adult & Adolescents
 - Check for Carotid Pulse
- Pediatric
 - Child BLS
 - * Check for Carotid pulse
 - Infant BLS
 - * Check for Brachial or Femoral Pulse

6. High Quality CPR

ADULT CARDIAC ARREST ALGORITHM – 2020 UPDATE



PEDIATRIC CARDIAC ARREST ALGORITHM FOR THE SINGLE RESCUER



PEDIATRIC CARDIAC ARREST ALGORITHM FOR 2 OR MORE RESCUERS

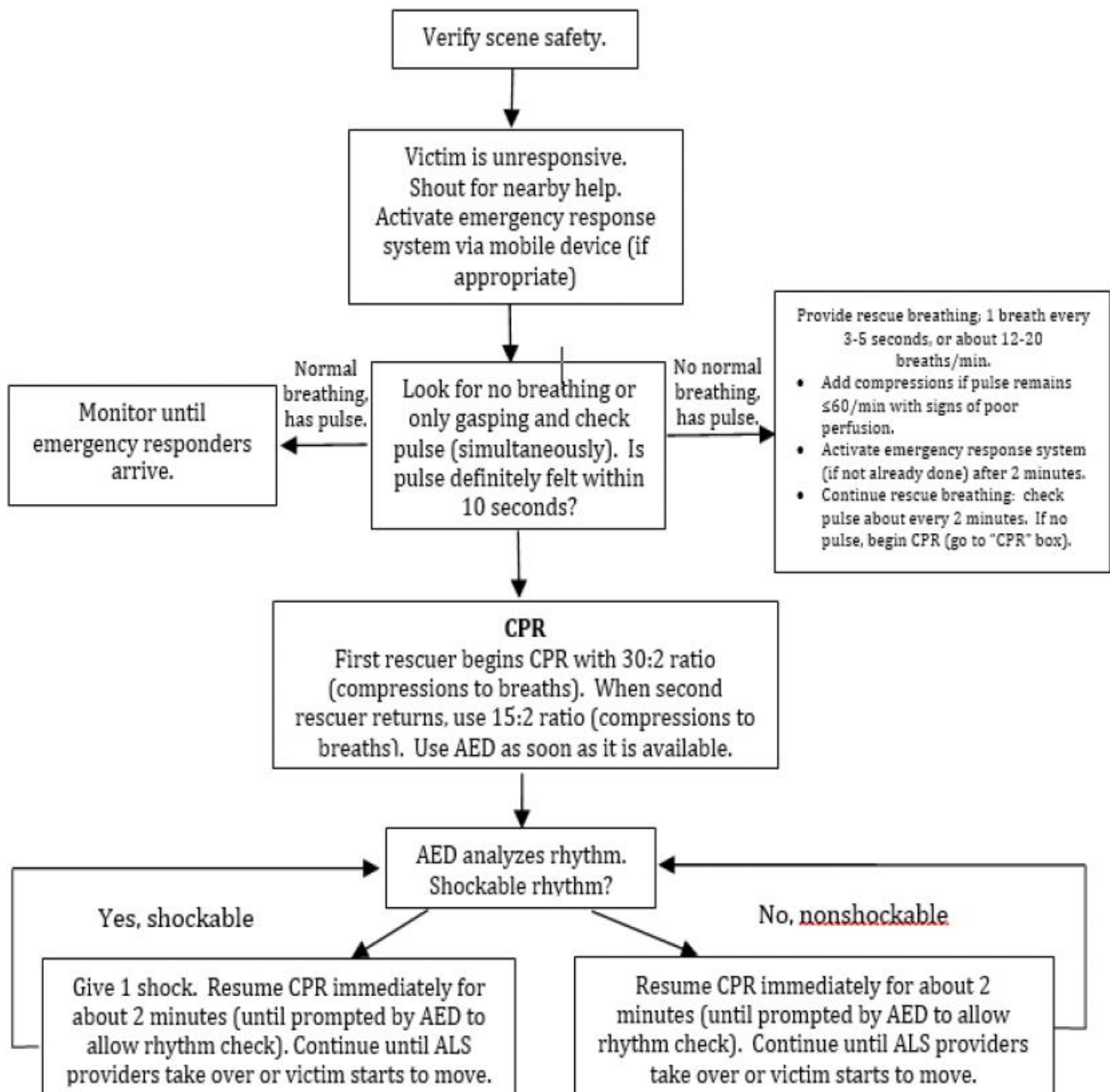


TABLE OF COMPARISON ON CARDIOPULMONARY RESUSCITATION FOR

COMPONENT	ADULTS AND ADOLESCENTS	
Scene safety	Make sure	
Recognition of cardiac arrest	No (Breathing and pulse)	
Activation of emergency response system	If you are alone with no mobile phone, leave the victim to activate the emergency response system and get the AED before beginning CPR	
Compression-Ventilation ratio without advanced airway	1 or 2 rescuers 30:2	
Compression-Ventilation ratio with advanced airway	Continuous Give 1 breath	
Compression rate		
Compression Depth	At least 2 inches (5cm)*	
Hand placement	2 hands on the lower half of the breastbone (sternum)	
Chest recoil	Allow the recoil of chest after	
Minimizing interruptions	Limit interruptions	
Location for Pulse Check (HCP only)	Carotid Pulse	
Counting for standardization Purpose	1 or 2 rescuers 1-29 up to 5 cycles (30 compressions within 18 seconds)	

N FOR

ADULTS & ADOLESCENTS, CHILDREN, AND INFANTS

CHILDREN (Age 1 year to Puberty)	INFANT (<1 year excluding newborns)
the environment is safe for rescuers and victim	
Check for responsiveness breathing or only gasping (ie, no normal breathing) No definite pulse felt within 10 seconds check can be performed simultaneously in less than 10 seconds)	
Witnessed collapse — Follow steps for adults and adolescents on the left Unwitnessed collapse — Give 2 minutes of CPR	
1 rescuer (30:2) 2 or more rescuers (15:2)	
compressions at a rate of 100-120/min every 6 seconds (10 breaths/min)	
100-120/min.	
At least 1/3 of the AP diameter of the chest or About 2 inches (5cm)	At least 1/3 of the AP diameter of the chest About 1½ inches (4 cm)
2 hands or 1 hand (optional for very small child) on the lower half of the breastbone (sternum)	1 rescuer 2 fingers 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
each compressions; do not lean of the chest after each compression	
in chest compressions to less than 10 seconds	
Carotid Pulse or Femoral Pulse	Brachial Pulse or Femoral Pulse
1 rescuer 1-29 up to 5 cycles (30 compressions within 18 seconds) 2 or more rescuers 1-14, 1 up to 10 cycles (15 compressions within 9 seconds)	1 rescuer 1-29 up to 5 cycles (30 compressions within 18 seconds) 2 or more rescuers 1-14, 1 up to 10 cycles (15 compressions within 9 seconds)

CARDIOPULMONARY RESUSCITATION

- Continue CPR until:
 - AED arrives and is ready for use
 - EMS providers take over the care of the victim
- Reassess victim every 2 minutes
- Rescuers may switch roles (for Two-Man Rescuers)
- If patient becomes conscious, place patient in recovery position

CPR with Advanced Airway

- Cycles of 30 compressions:2 ventilations should be continued until an advanced airway is placed
- If an advanced airway is already in place:
 - Continue chest compressions at a rate of 100-120 per minute, without pauses for ventilation.
 - Ventilation rate of 1 breath every 6 sec. (10 breaths per minute)

Alternative Techniques and Ancillary Devices for CPR

1. Hands-Only (Compression-only) CPR:
 - Outcome is better than outcome of NO CPR
 - Lay rescuers should do compression-only if they are unwilling or unable to provide rescue breaths
2. Mechanical Piston Device:
 - A mechanical piston device consists of a compressed gas or electric-powered plunger mounted on a backboard; it is used to depress the sternum.
3. Load-Distributing Band Device:
 - A circumferential chest compression device composed of a pneumatically or electrically actuated constricting band and backboard.
 - Easy to use and battery operated, it squeezes the patient's entire chest to improve blood flow to the heart and brain

Recovery Position in CPR

Adult and Child

- Bend the arm of the patient and place the back of the victim's hand against his/her cheek and hold there
- Turn the victim towards you as one unit

DONT's in External Chest Compression:

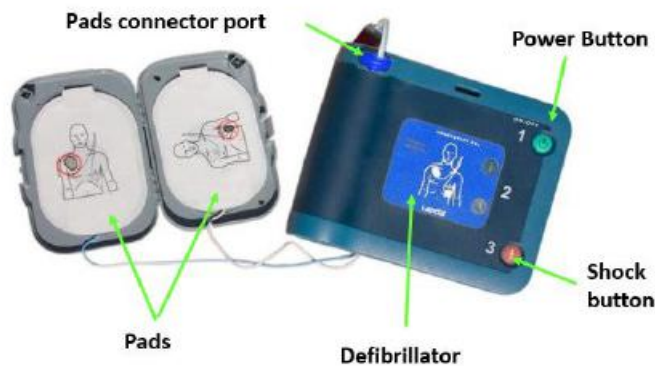
- | | | |
|------------|----------|------------------|
| • Jerker | • Bender | • Bouncer |
| • Massager | • Rocker | • Double Crosser |

SESSION II (Part B)

AUTOMATED EXTERNAL DEFIBRILLATOR (AED)

AEDs are sophisticated computerized devices that can analyze heart rhythms and generate high voltage electric shocks.

Example: AED Trainer



Indica- portance

Early defibrillation is critical for victims of sudden cardiac arrest because:

- The most frequent rhythm in sudden cardiac arrest is Ventricular Fibrillation (VF)
- The most effective treatment for VF is defibrillation
- Also indicated for Pulseless Ventricular Tachycardia
- Defibrillation is most likely to be successful if it occurs within minutes of collapse (sudden cardiac arrest)
- Defibrillation may be ineffective if it is delayed
- VF deteriorates to asystole if not treated

tions and Im-

Shockable Rhythms

- Ventricular Fibrillation (VF)
- Pulseless Ventricular Tachycardia

Non-Shockable Rhythms

- Pulseless Electrical Activity (PEA)

Ventricular Fibrillation (VF)

- VF is a common and treatable initial rhythm in adults with witnessed cardiac
- Survival rates are highest when immediate bystander CPR is provided and defibrillation occurs within 3 to 5 minutes of collapse
- Rapid defibrillation is the treatment of choice
- Rhythm causing 'all' sudden cardiac arrest
- Useless quivering of the heart à no blood flow
- Myocardium is depleted of oxygen & metabolic substrates

Pulseless Ventricular Tachycardia

The pulseless ventricular tachycardia rhythm is primarily identified by several criteria:

- The rate is usually greater than 180 beats per minute and the rhythm generally has a very wide QRS complex in ECG tracings.
- The patient will be pulseless
- The rhythm originates in the ventricles.

Causes of VF and Cardiac Arrest

1. Hypoxia
 - Near drowning
 - Burst lung
 - Decompression illness
 - Rebreather malfunction
 - Choking
 - Carbon monoxide poisoning
2. Bleeding
3. Heart attack
4. Drug overdose

DEFIBRILLATION

- Shock success
 - Termination of VF for at least 5 seconds following the shock
- VF frequently recurs after successful shocks & these recurrence should not be equated to shock failure

Automated External Defibrillator (AED)

- Controlled electrical shock
- May restore an organized rhythm
- Enables heart to contract & pump blood
- Placed in areas of public access
- Also called as PAD: Public Access Defibrillator Area
 - Railway stations
 - Airports
 - Shopping centers
- Stored in:
 - Secure display units
 - Accessible to all trained rescuers
 - Clearly marked
- Should always be stored ready to use with a fully charged battery
- Razors to shave the casualty's chest should be stored with the defibrillator, along with gloves in various sizes

Different Types of AED

1. AED Trainer
 - Not capable of delivering a shock.
 - Do not allow to be confused with real units.
2. Semi-Automated Defibrillator
 - Requires the user to press the button for analysis and shock.
3. Fully Automated Defibrillator
 - No intervention required for analysis and shock.
 - They are programmed to run self-test and they will indicate when maintenance is needed.

Several Factors That Can Affect AED Analysis

- Patient movement (eg. agonal gasp)
- Repositioning the patient

Use AED Only When Victims Have the Following 3 Clinical Findings

- No response
- No breathing
- No Pulse

Note: Defibrillation is also indicated for pulseless ventricular tachycardia (VT)

Special Conditions that Affect the Use of AED

- The victim is 1 month old or less.
- The victim has a hairy chest.
- The victim is lying in water, immersed in water, or water is covering the victim's chest.
- The victim has implanted defibrillator, or pacemaker.
- The victim has a transdermal medication patch or other object on the surface of the skin where the AED electrode pads are placed.

CRITICAL CONCEPTS:

The four (4) Universal Steps of AED Operation

P — POWER ON the AED.

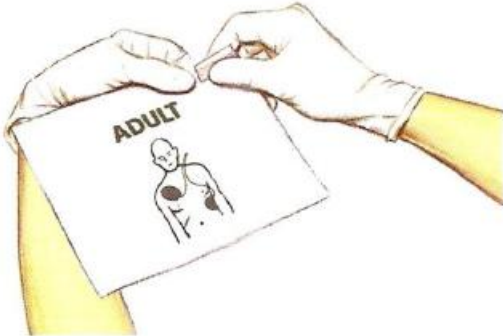
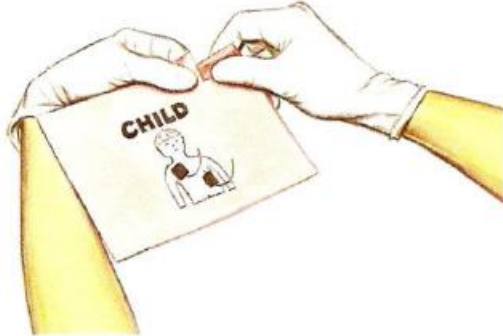
A — ATTACH the electrode pads to the victim's chest.

A — Clear the victim and **ANALYZE** the heart rhythm.

S — Clear the victim and deliver a **SHOCK** (if indicated)

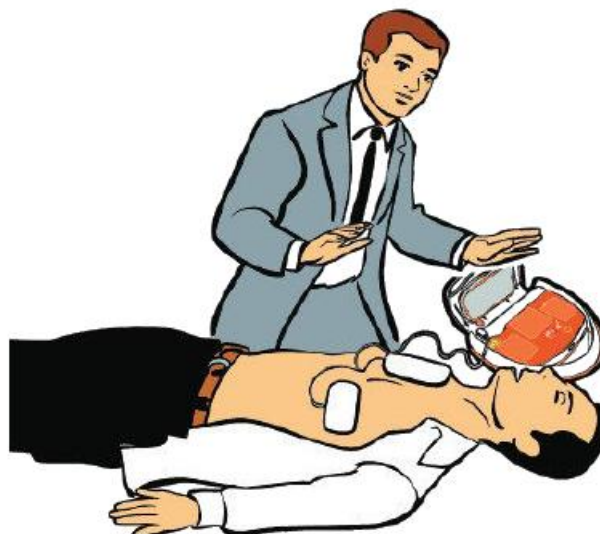
AED PROCEDURES

1. Continue CPR until an AED is available.
2. Once the AED is available, **P**ower on the AED and follow the voice prompts
3. Expose chest. Dry the skin or shave, if necessary.
4. **A**ttach pads in victim's bare chest

Victims 8 Years of Age and Older	Victims 1 to 8 Years of Age
<ul style="list-style-type: none"> Use only adult pads (do NOT use child pads or a child key or switch for victims 8 years of age and older). 	<ul style="list-style-type: none"> Use child pads if available. If you do not have child pads, you may use adult pads as long as the pads do not touch. If the AED has a key or switch that will deliver a child shock dose, turn the key or switch.
	

5. Keep following voice prompts
6. Once the voice prompt tells "**A**nalyzing heart rhythm, do not touch the patient", make sure:
 - No one touches the victim!
 - Remind co-rescuers/ bystanders to avoid touching the victim

NOTE: For Semi-automated AED, clear the victim and manually press analyze button



www.cardiaid.com

7. Deliver a **Shock** (if indicated)

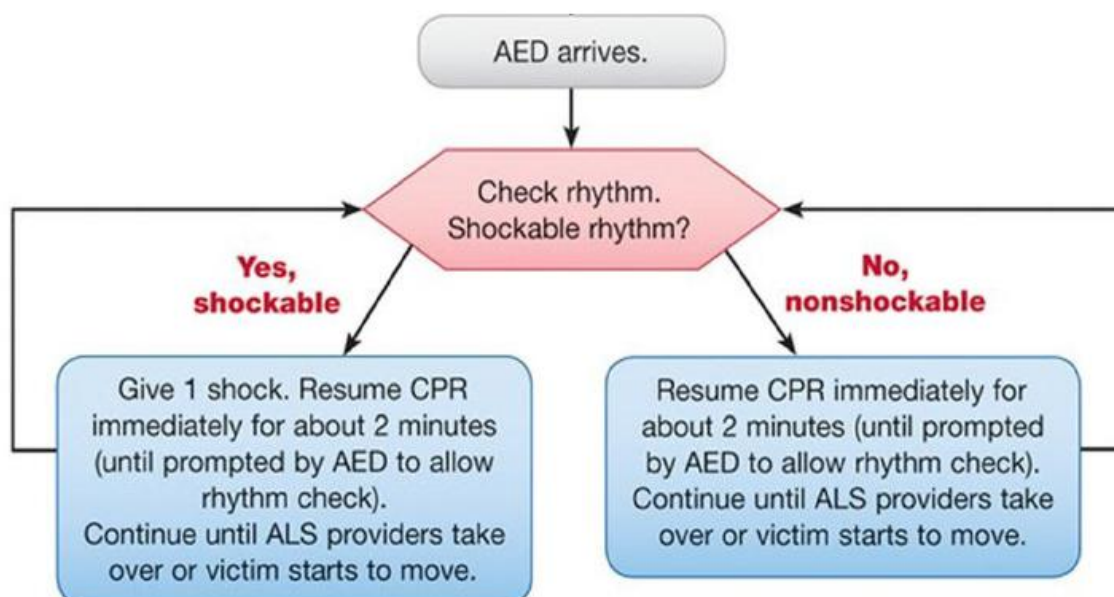
- If the AED prompt tells "SHOCK ADVISED" make sure:
 - ⇒ No one touches the victim!
 - ⇒ Verbal warning to co-rescuers/ bystanders:
 - "I am shocking on three, everybody clear 1, 2, 3"
 - Physical and hand gestures
 - Press the Shock button and immediately resume CPR
- If the AED prompt initially tells "NO SHOCK ADVISED":
 - ⇒ Continue CPR for 2 minutes
 - ⇒ Follow voice prompt
- If the AED prompt tells "NO SHOCK ADVISED" for the second time:
 - ⇒ Check for pulse



Shock First vs. CPR First

- For witnessed adult cardiac arrest when an AED is immediately available, it is reasonable that the defibrillator be used as soon as possible.
- For adults with unmonitored cardiac arrest or for whom an AED is not immediately available, it is reasonable that CPR be initiated while the defibrillator equipment is being retrieved and applied and that defibrillation, if indicated, be attempted as soon as the device is ready for use.

AED ALGORITHM



AED Maintenance

1. Become familiar with your AED and how it operates.
2. Check the AED for visible problems such as signs of damage.
3. Check the “ready-for-use” indicator on your AED (if so equipped) daily.
4. Perform all user-based maintenance according to the manufacturer’s recommendations.
5. Make sure the AED carrying case contains the following supplies at all times:
 - 2 sets of extra electrode pads (3 sets total)
 - 2 pocket face masks
 - 1 extra battery (if appropriate for your AED); some AEDs have batteries that last for years
 - 2 disposable razors
 - 5 to 10 alcohol wipes
 - 5 sterile gauze pads (4X4 inches), individually wrapped
 - 1 absorbent cloth towel

Remember: AED malfunctions are rare. Most AED “problems” are caused by operator error or failure to perform recommended user-based maintenance.

SESSION III (Part A)

RESPIRATORY ARREST AND RESCUE BREATHING

(For Health Care Providers only)

Introduction

Respiratory arrest can result from a number of causes, including submersion/near-drowning, stroke, FBAO, smoke inhalation, epiglottitis, drug overdose, electrocution, suffocation, injuries, myocardial infarction, lightning strike, and coma from any cause. When primary respiratory arrest occurs, the heart and lungs can continue to oxygenate

_____. Is the condition in which breathing stops or inadequate.

CAUSES of Respiratory Arrest

1. Obstruction

1.1 Anatomical Obstruction

1.2 Mechanical Obstruction

2. Diseases

2.1 Bronchitis

2.2 Pneumonia

2.3 Chronic Obstructive Pulmonary Disease (COPD) and other respiratory illnesses.

3. Other causes of Respiratory Arrest

3.1 Chest compression (by physical forces).

3.2 Circulatory collapse.

3.3 Drowning

3.4 Electrocution

3.5 External strangulation.

3.6 Poisoning

3.7 Suffocation

RESCUE BREATHING

- Is a technique of breathing air into person lungs to supply him or her oxygen needed to survive.
- Given to victims who are not breathing or inadequate but still have pulse.
- Crucial tool to revive the individual or keep him or her until the help comes.

WAYS TO VENTILATE THE LUNGS

1. _____. Is a quick, effective way to provide oxygen and ventilation to the victim.
2. _____. Is recommended when it is impossible to ventilate through the victim's mouth, the mouth cannot be opened (trismus), the mouth is seriously injured, or a tight mouth-to-mouth seal is difficult to achieve.
3. _____. If the victim is an infant (1-year-old), this is the best way in delivering ventilation by placing your mouth over the infant's mouth and nose to create a seal.
4. _____. It is used if the patient has a stoma; a permanent opening that connects the trachea directly to the front of the neck. These patients breathe only through the stoma.
5. _____. It could provide very low resistance ventilations to a patient by using a thin and flexible plastic.
6. _____. It could deliver ventilation to a patient by using a pocket facemask with a one-way valve to form a seal around the patient's nose and mouth.
7. _____. It could deliver ventilation to a patient by using a hand-operated device consisting of a self-inflating bag, one-way valve, facemask, and oxygen reservoir.

SPECIAL CONSIDERATIONS

- Rescuer should avoid pressing soft tissue under the chin this might obstruct the airway.
- Rescuer not to use the thumb to lift the chin.
- Rescuer not to close the victim's mouth completely (unless mouth to nose is the technique).
- Each rescue breath should give enough air to make the chest rise and be given at 1 second.
- Rescuer should avoid delivering more breaths (more than the number recommended) or breaths that are too large or too forceful.
- Rescuers should take a normal breath (not a deep breath) mouth to mouth or mouth-to-barrier device rescue breaths.

TABLE OF COMPARISON ON RESCUE BREATHING

	ADULT	CHILD	INFANT
Opening of air-way	Head Tilt-Chin Lift (HCP: for suspected spine injury, perform Jaw thrust maneuver)		
Method	Mouth-to-mouth or mouth-to-nose		Mouth-to-mouth and nose
Amount of Breath	Normal breath enough to make the chest rise		
Rate	1 breath every 5 – 6 seconds (24 breaths for 2 min) then reassess every 2 minutes	1 breath every 3 - 5 seconds (40 breaths for 2 min) then reassess every 2 minutes	
Counting for Teaching Purposes	Breathe 1002, 1003, 1004, 1001 , breathe, 1002, 1003, 1004, 1002 , Breathe,... up to 1024 and breathe	Breathe, 1002, 1001 , Breathe, 1002, 1002 , Breathe, 1002, 1003 , Breathe,... up to 1040 and breathe	

CAUTION: If you give breaths too quickly or with too much force, air is likely to enter the stomach rather than the lungs. This can cause gastric inflation. Gastric inflation frequently develops during mouth-to-mouth, mouth-to-mask, or bag-mask ventilation. Gastric inflation can result in serious complications, such as vomiting, aspiration, or pneumonia. Rescuers can reduce the risk of gastric inflation by avoiding giving breaths too rapidly or too forcefully.

SESSION III (Part B)

FOREIGN BODY AIRWAY OBSTRUCTION (FBAO)

_____ is a condition when solid material like chunked foods, coins, vomitus, small toys, etc. are blocking the airway.

CAUSES OF OBSTRUCTION

1. Improper chewing of large pieces of food.
2. Excessive intake of alcohol.
 - a. relaxation of tongue back into the throat
 - b. Aspirated vomitus (stomach content)
3. The presence of loose upper and lower dentures.
4. Children who are running while eating.
5. For smaller children of "hand-to-mouth" stage left unattended.

TWO TYPES OF OBSTRUCTION

1. _____. When tongue drops back and obstruct the throat. Other causes are acute asthma, croup, diphtheria, swelling, and cough (whooping).
2. _____. When foreign objects lodge in the pharynx or airways; fluids accumulate in the back of the throat.

CLASSIFICATION OF OBSTRUCTION

1. MILD OBSTRUCTION

A. Signs:

1. Good air exchange
2. Responsive and can cough forcefully
3. May wheeze between coughs.
4. Has increased respiratory difficulty and possibly cyanosis.

B. Rescuer Actions:

As long as good air exchange continues,

1. Encourage the victim to continue spontaneous coughing and breathing efforts.

2. Do not interfere with the victim's own attempts to expel the foreign body, but stay with the victim and monitor his or her condition.
3. If patient becomes unconscious/unresponsive, activate the emergency response system.

2. SEVERE OBSTRUCTION

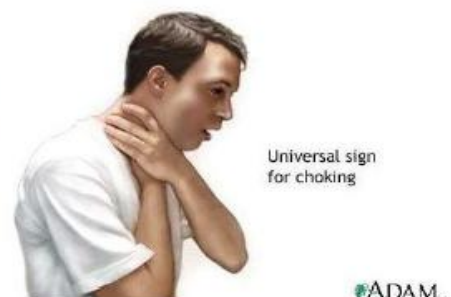
A. Signs:

1. Poor or no air exchange,
2. Weak or ineffective cough or no cough at all,
3. High-pitched noise while inhaling or no noise at all,
4. Increased respiratory difficulty,
5. Cyanotic (turning blue)
6. Unable to speak
7. Clutching the neck with the thumb and fingers making the universal sign of choking.
8. Movement of air is absent.

B. Rescuer Actions:

1. Ask the victim if he or she is choking.
2. If the victim nods and cannot talk, severe airway obstruction is present and you must perform abdominal/chest thrust and once becomes unconscious / unresponsive activate the emergency response system.

UNIVERSAL SIGN OF CHOKING is a sign wherein the victim is clutching his/ neck with one or both hands and gasping for breath.



Cover your fist with your other hand and thrust up and in with sufficient force to lift the victim off his feet



ADAM.

ABDOMINAL THRUST is an emergency procedure for removing a foreign object lodged in the airway that is preventing a person from breathing.

REMEMBER :

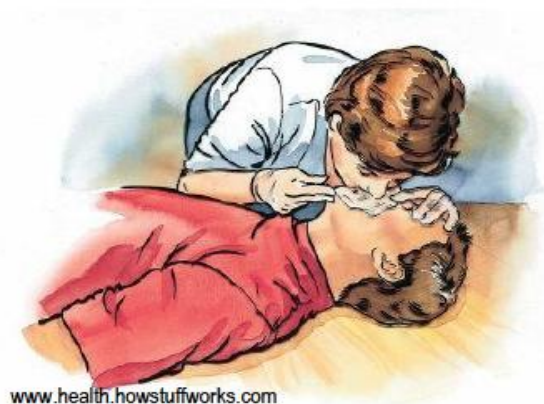
Abdominal thrust should not be used in infants under 1 year of age due to risk of causing injury.

FINGER SWEEP a technique recommended for relieving foreign body airway obstruction.

Remove the object with your finger **ONLY if you can see it**



ADAM.



RESCUE BREATHING is a technique of breathing air into person lungs to supply him or her with the oxygen needed to survive.

Complications from Abdominal Thrusts

1. Incorrect application of the Abdominal thrust can damage the chest, ribs and internal organs.
2. May also vomit after being treated with the Abdominal thrust.
3. They should be examined by a Physician to rule out any life-threatening complications.

Performing The Chest Thrust In Obviously Pregnant And Very Obese People

- The main difference in performing the Abdominal Thrust on this group of people is in the placement of the fists.
- Instead of using abdominal thrusts, Chest thrusts are used.
- The fists are placed against the middle of the breastbone and do the chest thrust.
- If the victim is unconscious, the chest thrusts are similar to those used in CPR.

****Caution:** If the pregnant or obese victim becomes unconscious, call for help and perform 30 Chest Compression.

FBAO MANAGEMENT

1. Determine scene safety.
2. Introduce yourself patient, guardian and or bystander.
3. Determine level of breathing difficulty by checking:
 - Infant – ineffective coughs, weak or absence of cry.
If so, tell parents/guardian that you are there to help.
 - Child/Adult – by asking if the victim is choking, “can you cough?”
If so, tell the victim that you are there to help.
4. Properly position the patient.
 - a. Infant- support the infant on rescuer's knee or lap.
 - b. Child/Adult - Assume straddle position behind.
5. Locate proper site:
 - a. Infant- give 5 back slaps and 5 chest thrusts using 2 fingers techniques.

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



ADAM.

Place two fingers in the middle of the infant's breastbone and give five quick downward thrusts



ADAM.

- b. Child/Adult- for abdominal thrust, properly position balled fist on the patient.
Properly perform abdominal thrust (At least 5 thrusts).
6. If patient becomes unconscious, carefully lay him/her down.
7. Call for help to activate Medical Assistance and perform 30 Chest Compression.
8. Check oral cavity for presence of obstruction. If foreign body is visible perform finger sweep, if not visible properly administer first Rescue Breath.
9. If air bounces back, re-position patient's head and properly administer second RB.
10. If air goes in, assess for pulse and consciousness.
11. If patient becomes conscious, properly place patient in recovery position.

