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**INTRODUCTION**

Cardiopulmonary resuscitation (CPR) is a combination of mouth-to-mouth resuscitation and chest compressions that delivers oxygen and artificial blood circulation to a person who is in cardiac arrest. It can be life-saving first aid. A heart attack occurs when the heart is starved of oxygen. A heart attack can 'stun' the heart and interrupt its rhythm and ability to pump. This is because the heart does not receive enough oxygen and cannot pump blood around the body. There is no heartbeat (pulse) because the heart is not working. The medical term for a heart attack is an acute myocardial infarction (AMI). When the blood stops circulating, the brain is starved of oxygen and the person quickly becomes unconscious and stops breathing. Without treatment the person will die.

**DEFINITION**

Cardiopulmonary resuscitation combines chest compression and rescue breathing in a lifesaving procedure performed when a person has stopped breathing or a person's heart has stopped

**CAUSES OF CARDIAC ARREST**

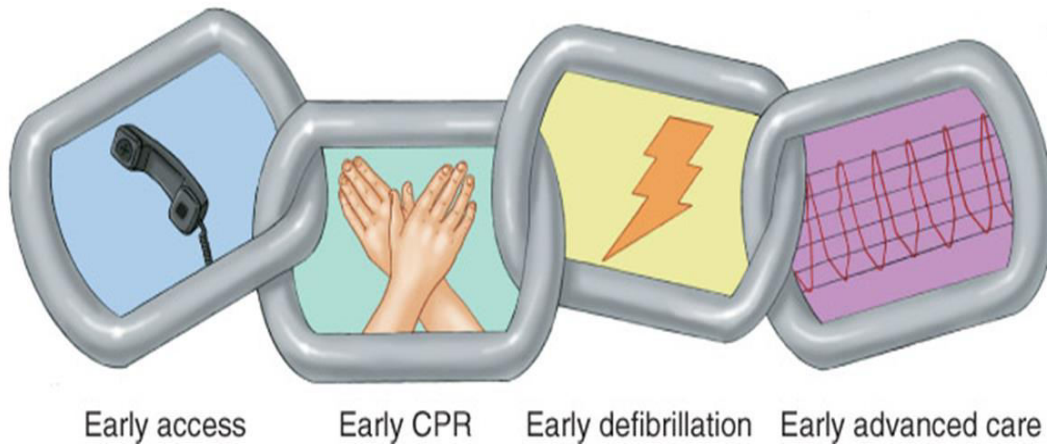
- Heart disease – this is the most common cause of cardiac arrest and is the leading cause of death in Victoria
- Drowning
- Suffocation
- Poisonous gases
- Head injury

- Drug overdose
- Electric shock.

## **BASIC LIFE SUPPORT (BLS)**

It is the level of medical care which is used for patients with life threatening illness or injuries until the patients can be given full medical care at a hospital. This can be provided by all trained medical personnel's and even by lay persons who have received BLS training.

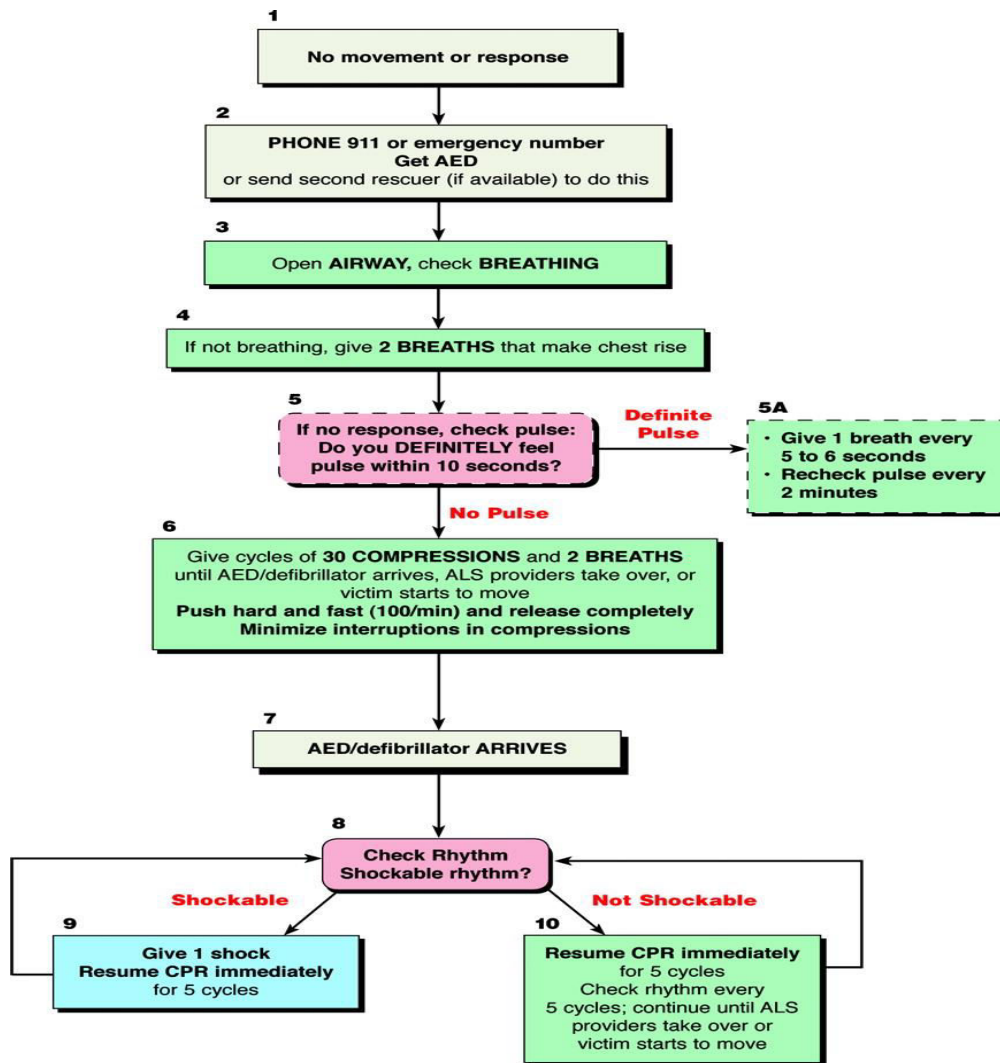
## **CHAIN OF SURVIVAL**



## **BASIC LIFE SUPPORT (BLS)- STEPS**

- Recognition
- Activate emergency response system
- CPR(Cardiopulmonary resuscitation)
  - Chest compression
  - Air way
  - Breathing
- AED(automated external defibrillator)

## **ALGORITHM**



## 1) RECOGNITION

Determine unresponsive

Look for apnea (gaspings, tap or gently shake shoulder and any you all right?)

2) activate EMS and get AED(out side the hospital)

Call code and ask for AED or crash cart (in hospital)

## CPR(Cardiopulmonary resuscitation)

- Chest compression
- Air way
- Breathing

## REMEMBER TO SPELL C-A-B

### COMPRESSIONS

- Put the person on his or her back on a firm surface.
- Kneel next to the person's neck and shoulders.
- Place the heel of one hand over the center of the person's chest, between the nipples. Place your other hand on top of the first hand. Keep your elbows straight and position your shoulders directly above your hands.
- Use your upper body weight (not just your arms) as you push straight down on (compress) the chest at least 2 inches (approximately 5 centimeters). Push hard at a rate of about 100 per minute.30 compressionIf you haven't been trained in CPR, continue chest compressions until there are signs of movement or until emergency medical personnel take over. If you have been trained in CPR, go on to checking the airway and rescue breathing.

### Airway: Clear the airway

1. If you're trained in CPR and you've performed 30 chest compressions, open the person's airway using the **head-tilt, chin-lift maneuver**. Put your palm on the person's forehead and gently tilt the head back. Then with the other hand, gently lift the chin forward to open the airway.

### Jaw –thrust maneuver(if cervical spine injury )

Grasp the angles of lower jaw and lift both hands one on each side, moving the jaw forward.

- Oropharyngeal airway
- Nasopharyngeal airway.

### Breathing: Breathe for the person

Rescue breathing can be mouth-to-mouth breathing or mouth-to-nose breathing if the mouth is seriously injured or can't be opened.

With the airway open (using the head-tilt, chin-lift maneuver), pinch the nostrils shut for mouth-to-mouth breathing and cover the person's mouth with yours, making a seal.Prepare to give **two rescue breaths**.

### AUTOMATED EXTERNAL DEFIBRILLATOR

These are defibrillator that has rhythm detection capacity and ability to advice the operator to deliver a shock using hands free defibrillator pads. Defibrillator gel are applied to the chest one to right of sternum just below clavicle and other to the left of apex deliver a shock using hands free defibrillator. For clearance before defibrillation/shock should be performed.

- BLS protocols continue until (1) the patient regains a pulse, (2) the rescuer is relieved by another rescuer of equivalent or higher training (See Abandonment), (3) the rescuer is too physically tired to continue CPR, or (4) the patient is pronounced dead by a medical doctor.<sup>[1]</sup>
- At the end of five cycles of CPR, always perform assessment via the AED for a shockable rhythm, and if indicated, defibrillate, and repeat assessment before doing another five cycles.
- The CPR cycle is often abbreviated as 30:2 (30 compressions, 2 ventilation's or breaths).

## **WHEN TO STOP CPR**

### **Discontinue CPR only when:**

- ✚ Effective spontaneous circulation and ventilation are restored.
- ✚ Resuscitation efforts are transferred to another trained person who continues CPR.
- ✚ A physician orders you to stop.
- ✚ The patient is transferred to properly trained EMS personnel.
- ✚ Unsafe scene

## **POSSIBLE COMPLICATIONS**

- Broken ribs
- Check hand placement and continue
- Gastric Distension (air in the stomach)
- Can happen if the airway is not open, re-tilt head
- Make sure breaths are not given too forcefully or too fast, give over 1 second each and allow for exhalation
- Give breaths only until the chest rises

- Be alert for vomiting and keep airway clear
- Chest does not rise
- Reposition head and try breath again. If it's still not rising go right to compressions  
Victim breathes through a stoma (opening in the neck).
- If the chest does not rise with breaths, cover mouth and nose for possible air leakage.

## **BIBLIOGRAPHY**

1. American Heart association guidelines for cardiopulmonary Resuscitation and Emergency Cardiovascular Care part Adult Basic Life support.
2. BT. Basavanthappa Medical Surgical Nursing Jaypee publications, 1<sup>st</sup> edition 2005.
3. Lewis, Collier, Heit Kemper. Medical surgical nursing – assessment and management of clinical problems. Mosby publications. 4<sup>th</sup> edition.

## **NET REFERENCE**

[www.ienwidipedia.com](http://www.ienwidipedia.com)