

**Pacific Medical College & Hospital, Udaipur**  
**Syllabus & Course Content of BCLS**

The syllabus for Basic Cardiac Life Support (BCLS) for medical PG students typically includes:

**1. \*Introduction to BCLS:\***

- Definition and importance of BCLS.
- Basic anatomy and physiology of the cardiovascular system.
- Chain of survival concept.

**2. \*Recognition of Cardiac Arrest:\***

- Signs and symptoms of cardiac arrest.
- Differentiating between cardiac arrest and other medical emergencies.

**3. \*Basic Life Support Techniques:\***

- Checking responsiveness and calling for help.
- Assessing breathing and airway.
- Performing chest compressions.
- Providing rescue breathing.
- Use of barrier devices (face shields, pocket masks) during rescue breaths.

**4. \*Use of Automated External Defibrillator (AED):\***

- Indications and contraindications for AED use.
- Proper application of AED pads.
- Following AED prompts and instructions.

## **5. \*Special Considerations:\***

- BCLS in special populations (pediatric, geriatric, pregnant patients).
- Modifications in BCLS techniques for infants and children.
- Addressing unique challenges in BCLS for different patient demographics.

## **6. \*Team Dynamics:\***

- Roles and responsibilities of team members during resuscitation efforts.
- Effective communication during BCLS interventions.
- Coordination and teamwork in a simulated resuscitation scenario.

## **7. \*Post-Resuscitation Care:\***

- Importance of post-resuscitation care.
- Recognition and management of potential complications post-resuscitation.
- Transfer of care to advanced medical providers.

## **8. \*Legal and Ethical Considerations:\***

- Understanding legal and ethical aspects of BCLS.
- Consent for BCLS interventions.
- Documentation requirements for BCLS procedures.

## **9. \*Practical Skills Training:\***

- Hands-on practice of BCLS techniques including chest compressions, rescue breaths, and AED use.
- Simulated scenarios to apply BCLS knowledge and skills under pressure.

**10. \*Assessment and Certification:\***

- Written examination to assess theoretical knowledge of BCLS.
- Practical assessment of BCLS skills proficiency.
- Certification upon successful completion of the BCLS course.

It's important to note that the syllabus may vary slightly depending on the institution offering the BCLS training and any specific guidelines or requirements set by accrediting bodies or medical boards.

-----



Dr. M. M. Mangal

**Principal & Controller**

Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)



## Basic Cardiac Life Support (BCLS) Demo Exam

---

### **\*Instructions:\***

- This exam consists of multiple-choice questions.
- Choose the most appropriate answer for each question.
- Mark your answers on the provided answer sheet.
- You have 40 minutes to complete the exam.
- Good luck!

---

### **\*1. What does the acronym BCLS stand for?\***

- a) Basic Cardiovascular Life Support
- b) Basic Cardiac Life Support
- c) Basic Circulatory Life Support
- d) Basic Chest Life Support

### **\*2. What is the first step in the BCLS algorithm?\***

- a) Check for responsiveness
- b) Assess breathing
- c) Open the airway
- d) Check for circulation

### **\*3. What is the recommended compression-to-ventilation ratio for adult BCLS?\***

- a) 15 compressions to 2 ventilations
- b) 30 compressions to 2 ventilations
- c) 30 compressions to 1 ventilation
- d) 15 compressions to 1 ventilation

**\*4. Which of the following is an indication for initiating BCLS?\***

- a) Stable vital signs
- b) Conscious and alert patient
- c) Absence of pulse
- d) Normal respiratory rate

**\*5. How deep should compressions be performed on an adult during BCLS?\***

- a) 1 inch (2.5 cm)
- b) 2 inches (5 cm)
- c) 1.5 inches (4 cm)
- d) 3 inches (7.5 cm)

**\*6. What is the recommended compression rate for adult BCLS?\***

- a) 60-80 compressions per minute
- b) 80-100 compressions per minute
- c) 100-120 compressions per minute
- d) 120-140 compressions per minute

**\*7. What is the most appropriate next step if a patient is found unresponsive and not breathing normally?\***

- a) Apply an AED
- b) Administer high-flow oxygen
- c) Start CPR
- d) Assess the pulse

**\*8. What does AED stand for?\***

- a) Automated External Defibrillator
- b) Advanced Emergency Device
- c) Automated External Device
- d) Automated Emergency Defibrillator

**\*9. In BCLS, what does the "C" stand for?\***

- a) Compression
- b) Cardio version
- c) Circulation
- d) Chest

**\*10. When should an AED be applied during BCLS?\***

- a) Before starting compressions
- b) After 5 cycles of compressions and ventilations
- c) As soon as available
- d) Only if the patient is in shock

**\*11. What is the recommended compression-to-ventilation ratio for pediatric BCLS?\***

- a) 15 compressions to 2 ventilations
- b) 30 compressions to 2 ventilations
- c) 30 compressions to 1 ventilation
- d) 15 compressions to 1 ventilation

**\*12. At what age is the pediatric chain of survival initiated?\***

- a) Birth
- b) 1 year old
- c) 5 years old
- d) 10 years old

**\*13. What is the preferred method for checking the pulse in an unresponsive adult?\***

- a) Carotid
- b) Radial
- c) Brachial
- d) Femoral

**\*14. What is the correct hand placement for performing chest compressions on an adult?\***

- a) Lower half of sternum
- b) Upper half of sternum
- c) Over the ribs
- d) Over the xiphoid process

**\*15. How should rescuers confirm the effectiveness of chest compressions during BCLS?\***

- a) Monitor ECG
- b) Check for carotid pulse
- c) Use capnography
- d) Chest recoil

**\*16. What should be done if an advanced airway is in place during BCLS?\***

- a) Continue with compressions and ventilations
- b) Remove the advanced airway immediately
- c) Decrease the rate of ventilations
- d) Stop chest compressions

**\*17. Which of the following is a reversible cause of cardiac arrest according to the H's and T's?\***

- a) Hypoxia
- b) Bradycardia
- c) Hyperthermia
- d) Hypertension

**\*18. What is the recommended depth for chest compressions on infants during BCLS?\***



- a) 1 inch (2.5 cm)
- b) 1.5 inches (4 cm)
- c) 2 inches (5 cm)
- d) 2.5 inches (6.5 cm)


**\*19. At what age is the transition from pediatric to adult BCLS protocols typically made?\***

- a) 1 year old
- b) 8 years old
- c) 10 years old
- d) 12 years old

**\*20. How should rescuers position their hands when performing chest compressions on an infant?\***

- a) Two fingers over the sternum
- b) One hand over the sternum
- c) One hand over the chest and one hand over the back
- d) Two thumbs over the sternum

-----



Dr. M. M. Mangal

**Principal & Controller**

Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)

**\*Answer Sheet:\***

1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	
13.	
14.	
15.	
16.	
17.	
18.	
19.	
20.	

# Pacific Medical College & Hospital, Udaipur

## Content

In a basic cardiac life support (BCLS) course for medical postgraduate students, the pharmacology of resuscitation typically covers the medications used during cardiac arrest and other life-threatening situations. Some key medications include:

1. **\*Epinephrine (adrenaline)\*:** Administered to improve cardiac output and blood pressure during cardiac arrest. It acts as a potent vasoconstrictor to help restore circulation.
2. **\*Amiodarone\*:** Used to treat life-threatening ventricular arrhythmias such as ventricular fibrillation and pulseless ventricular tachycardia. It stabilizes cell membranes and prolongs action potential duration.
3. **\*Atropine\*:** Employed to treat symptomatic bradycardia (slow heart rate) by blocking the parasympathetic nervous system, thereby increasing heart rate.
4. **\*Aspirin\*:** Given in suspected cases of acute coronary syndrome (heart attack) to inhibit platelet aggregation and reduce the risk of further clot formation.
5. **\*Nitroglycerin\*:** Used to relieve chest pain (angina) by dilating coronary arteries, improving blood flow to the heart.
6. **\*Oxygen\*:** Administered to improve tissue oxygenation during cardiac arrest and respiratory distress.

7. **\*Benzodiazepines (e.g., diazepam, lorazepam)\*:** Utilized to manage seizures and agitation during resuscitation efforts.

In addition to understanding the indications, dosages, and routes of administration for these medications, medical postgraduate students in a BCLS course also learn about potential side effects, contraindications, and proper techniques for drug administration (e.g., intravenous, intraosseous). They are also trained to recognize medication errors and manage drug-related complications during resuscitation.

-----



Dr. M. M. Mangal

**Principal & Controller**

Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)

**\*Agenda:\***

1. **\*Introduction and Icebreaker (15 minutes):\***
  - Welcome address by facilitators
  - Introduction of participants
  - Icebreaker activity to encourage interaction
  
2. **\*Overview of Basic Cardiac Life Support (BCLS) (30 minutes):\***
  - Explanation of the importance of BCLS
  - Overview of key concepts and techniques
  
3. **\*CPR Techniques and Demonstration (45 minutes):\***
  - Explanation of CPR steps (compressions, airway, breathing)
  - Live demonstration of CPR techniques by instructors
  - Q&A session
  
4. **\*AED (Automated External Defibrillator) Training (30 minutes):\***
  - Explanation of AED purpose and usage
  - Demonstration of AED operation
  - Hands-on practice with AED units
  
5. **\*BLS Algorithms and Scenarios (60 minutes):\***
  - Overview of basic life support algorithms
  - Presentation of common emergency scenarios
  - Group discussions and role-playing exercises
  
6. **\*Break (15 minutes):\***
  - Refreshments and networking opportunity
  
7. **\*Practical Skills Session (60 minutes):\***
  - Rotating stations for hands-on practice
  - CPR practice on manikins
  - AED simulation exercises
  
8. **\*Feedback and Wrap-Up (15 minutes):\***
  - Collection of feedback forms
  - Recap of key learning's
  - Closing remarks by facilitators

**\*Note:\*** Timings are approximate and subject to adjustment based on the flow of the workshop.

**\*Facilitators:\***

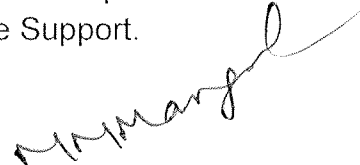
1. \_\_\_\_\_

2. \_\_\_\_\_

**\*Participants:\***

- Medical PG students attending the workshop

Please arrive promptly to ensure the smooth running of the workshop. We look forward to an engaging and informative session on Basic Cardiac Life Support.



Dr. M. M. Mangal

**Principal & Controller**

Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)

Basic Cardiac Life Support (BCLS) course for medical postgraduate (PG) students typically includes the following:

1. **\*Cardiopulmonary Resuscitation (CPR):\*** Techniques for adults, children, and infants, including compression depth, rate, and proper hand placement. Integration of high-quality CPR with minimal interruptions.
2. **\*Use of Automated External Defibrillators (AEDs):\*** Training on how to operate AEDs and recognition of shockable rhythms requiring defibrillation.
3. **\*Airway Management:\*** Basic airway maneuvers, such as head tilt-chin lift and jaw thrust, and use of adjuncts like oropharyngeal and nasopharyngeal airways. Introduction to advanced airway techniques, including bag-mask ventilation and insertion of supraglottic airway devices.
4. **\*Recognition and Management of Cardiac Arrest:\*** Signs of cardiac arrest, activation of emergency response systems, and initiation of CPR. Understanding the importance of early defibrillation and rapid intervention.
5. **\*Electrocardiogram (ECG) Interpretation:\*** Basic ECG rhythm recognition, focusing on identifying life-threatening arrhythmias such as ventricular fibrillation, ventricular tachycardia, asystole, and pulseless electrical activity.
6. **\*Pharmacology of Resuscitation:\*** Overview of medications used in cardiac arrest management, including indications, dosages, and administration routes.

Common medications may include epinephrine, amiodarone, and sodium bicarbonate.

**7. \*Team Dynamics and Communication:\*** Importance of effective communication and teamwork during resuscitation efforts. Understanding roles and responsibilities within a resuscitation team and coordination of actions.

**8. \*Post-Resuscitation Care:\*** Immediate post-resuscitation care, including optimization of hemodynamics, airway management, and monitoring for potential complications. Introduction to therapeutic hypothermia for selected patients.

**9. \*Special Considerations:\*** Resuscitation in special populations, such as pregnant women, pediatric patients, and patients with specific medical conditions or comorbidities.

**10. \*Simulation-Based Training:\*** Hands-on practice through simulated cardiac arrest scenarios using manikins and other training aids. Application of BCLS principles in realistic clinical situations to reinforce learning resuscitation.

A. CPR for medical postgraduate (PG) students, according to the guidelines provided by the American Heart Association (AHA), covering adults, children, and infants:

**\*1. Recognition of Cardiac Arrest:\***

- Assess responsiveness by tapping the person and shouting, "Are you okay?"
- Check for normal breathing for no more than 10 seconds.
- If unresponsive and not breathing normally, activate emergency medical services (EMS) and get an automated external defibrillator (AED) if available.



**\*CPR Sequence for Adults:\***

- Initiate CPR with compressions first.
- Compressions should be performed at a rate of 100 to 120 compressions per minute.
- Depth of compressions should be at least 2 inches (5 centimeters) for adults.
- Compression-to-ventilation ratio is 30 compressions to 2 ventilations for single rescuer CPR.

**\*CPR Sequence for Children (1 year to puberty):\***

- Use the same compression technique as for adults but with less depth (about 2 inches or 5 centimeters).
- Compression-to-ventilation ratio is 30 compressions to 2 ventilations for single rescuer CPR.
- If two rescuers, perform 15 compressions to 2 ventilations.

**\*CPR Sequence for Infants (birth to 1 year):\***

- Perform CPR with two fingers in the center of the chest, just below the nipple line.
- Depth of compressions should be about 1.5 inches (4 centimeters).
- Compression-to-ventilation ratio is 30 compressions to 2 ventilations for single rescuer CPR.
- If two rescuers, perform 15 compressions to 2 ventilations.

**\*Compression Technique:\***

- Keep arms straight and shoulders directly over the hands.
- Press down on the chest using the weight of the upper body, not just the arms.
- Compressions should be smooth, uninterrupted, and delivered at an adequate depth.
- Allow full chest recoil between compressions.

**\*Ventilation Technique:\***

- Maintain an open airway using the head-tilt-chin-lift or jaw thrust maneuver.
- Pinch the nose shut and give rescue breaths over 1 second, watching for chest rise.
- Deliver each breath to make the chest rise visibly.

**\*Use of AED:\***

- Turn on the AED and follow the prompts.
- Apply electrode pads to the bare chest as instructed by the AED.
- Clear the patient and follow AED prompts for rhythm analysis and shock delivery if advised.

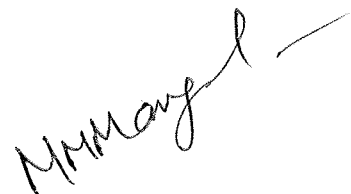
**\*Team Dynamics and Communication:\***

- Assign roles within the resuscitation team, such as compressor, AED operator, airway manager, and team leader.
- Communicate clearly and effectively during resuscitation efforts, providing updates on the patient's condition and responding to prompts from the team leader.

**\*Post-Resuscitation Care:\***

- Initiate post-resuscitation care, including optimizing ventilation and oxygenation, monitoring vital signs, and administering medications as indicated.

-----



Dr. M. M. Mangal

**Principal & Controller**  
Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)

## 2. Use of Automated External Defibrillators :

### **\*1. Recognition of Cardiac Arrest:\***

- Assess responsiveness by tapping the person and shouting, "Are you okay?"
- Check for normal breathing for no more than 10 seconds.
- If unresponsive and not breathing normally, activate emergency medical services (EMS) and retrieve an AED if available.

### **\*2. Turn on the AED:\***

- Locate and retrieve the nearest AED.
- Turn on the AED by pressing the power button, usually located on the front or side of the device.

### **\*3. Apply Electrode Pads:\***

- Expose the person's bare chest and remove any clothing or jewelry that may interfere with pad placement.
- Open the electrode pads and remove the backing to expose the adhesive side.
- Apply the pads to the bare chest as indicated by the AED illustrations or voice prompts:
  - One pad should be placed on the upper right chest just below the collarbone.
  - The other pad should be placed on the lower left side of the chest, just below the armpit.

### **\*4. Clear the Patient:\***

- Ensure that no one is touching the person or is in contact with them.
- Verbally announce, "Stand clear," to alert everyone to move away from the patient.

### **\*5. Analyze Rhythm:\***

- Press the analyze button on the AED to allow the device to analyze the person's heart rhythm.
- Ensure that no one is touching the person during rhythm analysis.

**\*6. Follow Voice or Visual Prompts:\***

- Listen carefully to the voice prompts provided by the AED.
- Follow visual prompts displayed on the AED screen if available.

**\*7. Deliver Shock (If Advised):\***

- If the AED detects a shockable rhythm (e.g., ventricular fibrillation or pulseless ventricular tachycardia), the device will prompt you to deliver a shock.
- Make sure that no one is touching the person, and then press the shock button as directed by the AED.

**\*8. Perform CPR:\***

- After delivering the shock, immediately resume CPR, starting with chest compressions.
- Follow the compression-to-ventilation ratio recommended by current guidelines (typically 30 compressions to 2 ventilations).

**\*9. Continue CPR and Follow AED Prompts:\***

- Continue CPR cycles as directed by the AED, alternating between compressions and ventilations.
- Follow any additional prompts provided by the AED until emergency medical services arrive or the person shows signs of life.

**\*10. Post-Resuscitation Care:\***

- Once EMS arrives, provide them with information about the person's condition, including any interventions performed and the timing of those interventions.
- Assist EMS as needed with ongoing care and transportation to the hospital.



Dr. M. M. Mangal

**Principal & Controller**

**Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)**

## Airway Management

- 1. Assessment:** Evaluate the patient's airway for any obstructions, such as foreign objects or swelling, and assess their ability to maintain a clear airway.
- 2. Positioning:** Ensure proper positioning of the patient's head and neck to open the airway. This often involves the head-tilt chin-lift maneuver or the jaw thrust maneuver if there's a suspicion of cervical spine injury.
- 3. Airway adjuncts:** Learn to use basic airway adjuncts such as oropharyngeal and nasopharyngeal airways to help maintain an open airway, especially if the patient is unconscious or unable to maintain their airway independently.
- 4. Ventilation:** Understand the principles of bag-mask ventilation, including proper technique and adequate tidal volume delivery. This may involve using a bag-valve-mask device with supplemental oxygen.
- 5. Advanced airway management:** Introduction to advanced techniques such as endotracheal intubation and supraglottic airway insertion. While these skills may not be performed by all healthcare providers, understanding their indications, contraindications, and basic techniques is essential for managing patients with compromised airways.
- 6. Monitoring:** Emphasize the importance of continuous monitoring of the patient's airway patency, breathing, and oxygenation status throughout resuscitation efforts.

7. **\*Team communication:\*** Stress the importance of effective communication within the resuscitation team, including clear and concise instructions during airway management procedures.

8. **\*Practice and simulation:\*** Provide opportunities for hands-on practice and simulation scenarios to reinforce airway management skills in a controlled environment before encountering real-life emergencies.

-----



Dr. M. M. Mangal

**Principal & Controller**

**Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)**

## Electrocardiogram Interpretation

In a basic cardiac life support (BCLS) course, electrocardiogram (ECG) interpretation typically involves identifying key rhythms and abnormalities associated with cardiac arrest and other cardiac conditions. Participants learn to recognize normal sinus rhythm, as well as abnormal rhythms such as ventricular fibrillation, ventricular tachycardia, asystole, and pulseless electrical activity. They also learn to identify signs of myocardial infarction (heart attack) such as ST-segment elevation or depression. Training may include understanding basic ECG waveforms and their significance in diagnosing cardiac conditions and guiding treatment decisions during resuscitation efforts.



Dr. M. M. Mangal

**Principal & Controller**

**Principal & Controller  
Pacific Medical College  
& Hospital, Udaipur (Raj.)**

Thank you for participating in the Basic Cardiac Life Support (BCLS) workshop. Your feedback is valuable to us in improving future sessions. Please take a few moments to complete this form.

1. **Overall Satisfaction**

- How satisfied were you with the BCLS workshop?

- a. Very satisfied
- b. Somewhat satisfied
- c. Neutral
- d. Somewhat dissatisfied
- e. Very dissatisfied


2. **Content**

- Rate the relevance and usefulness of the topics covered in the workshop.

Ans. 

5.		4.		3.		2.		1.	
----	--	----	--	----	--	----	--	----	--

- Were the concepts explained clearly and effectively?

Ans. 

Yes		No	
-----	--	----	--

3. **Instructors**

- Rate the knowledge and teaching ability of the instructors.

Ans.

- Did the instructors engage with the participants effectively?

Ans.

4. **Hands-on Training**

- How beneficial was the hands-on training experience?

Ans.

- Were there enough opportunities to practice skills?

Ans.

5. **Materials/Resources**



- Were the materials provided (manuals, handouts, etc.) helpful? (Yes/No)

Ans. 

Yes		No	
-----	--	----	--

- Any suggestions for improving the materials/resources?

Ans.

**6. \*\*Organization\*\***

- Rate the organization of the workshop (registration process, scheduling, etc.). (1-5 scale)

Ans. 

5.		4.		3.		2.		1.	
----	--	----	--	----	--	----	--	----	--

- Were there any logistical issues?

Ans.

**7. \*\*Venue\*\***

- How would you rate the venue/location of the workshop?

Ans.

- Any suggestions for future venue selections?

Ans.

**8. \*\*Suggestions for Improvement\*\***

- Do you have any suggestions for improving future BCLS workshops?

Ans.

**9. \*\*Additional Comments\*\***

- Please share any additional comments or feedback you have about the workshop.

Ans.

-----

Thank you for taking the time to complete this feedback form. Your input is invaluable in helping us enhance our training programs.

# **BLS**

**By:**

**DR HARSHA MAKWANA**

**Professor & Head**

**Emergency Medicine Department**

**LG hospital**

**AMCMET Medical College**

**Ahmedabad**

# A worker suddenly collapsed in front of you



**You are called by your neighbour**

**You go there and see that his grand father is collapsed**



You are standing wearing a white coat and  
A collapsed person is brought to you



**BLS**

# Basic Life Support CPR+ AED

Sequences of procedures of **Chest compression**  
and **Breathing** performed to restore circulation

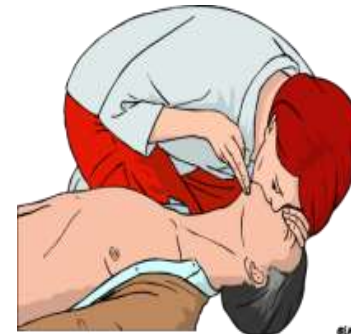
On a person:

**Cardiopulmonary arrest**

No Response

No Pulse

No Breath



# Why Known as Basic Life Support

## Can be performed By:

- **Any one** who knows how to do it
- **Anywhere**
- **Any time** (Immediately)
- **Anyway** (Without any equipment)

**Do not require**



# Why we should learn?

**70% Sudden cardiac arrest  
occurs at home or out side of hospital**

**when cardiac arrest occurs:**

**Brain damage starts in 4 to 6 minutes**

**&**

**completes in 10 -12 minutes**

**Immediately performed CPR**

**has better chance of survival**

**prevents irreversible brain damage**



# Aim

- **Buy time till expert arrives or reversible cause is found and treated**
- **Maintain supply of blood to vital organs (Brain and Heart )**
- **Increase chances of successful defibrillation**

## Objectives:

All should be able to:

- Assess collapsed victim
- Perform chest compression
- Provide effective breathing
- Use AED/Defibrillator
- Give recovery position
- Proceed in choking victim

# **CPR- C**ardio **P**ulmonary **R**esuscitation



**Approach safely**

**Check response**

**Shout for help**

**Call 108**

**Use Mobile on speaker**

**Check for  
pulse and breathing**

**30 Chest compression**

**Open airway**

**Give 2 breath**



# Approach safely

Scene Safety

Rescuer

Victim

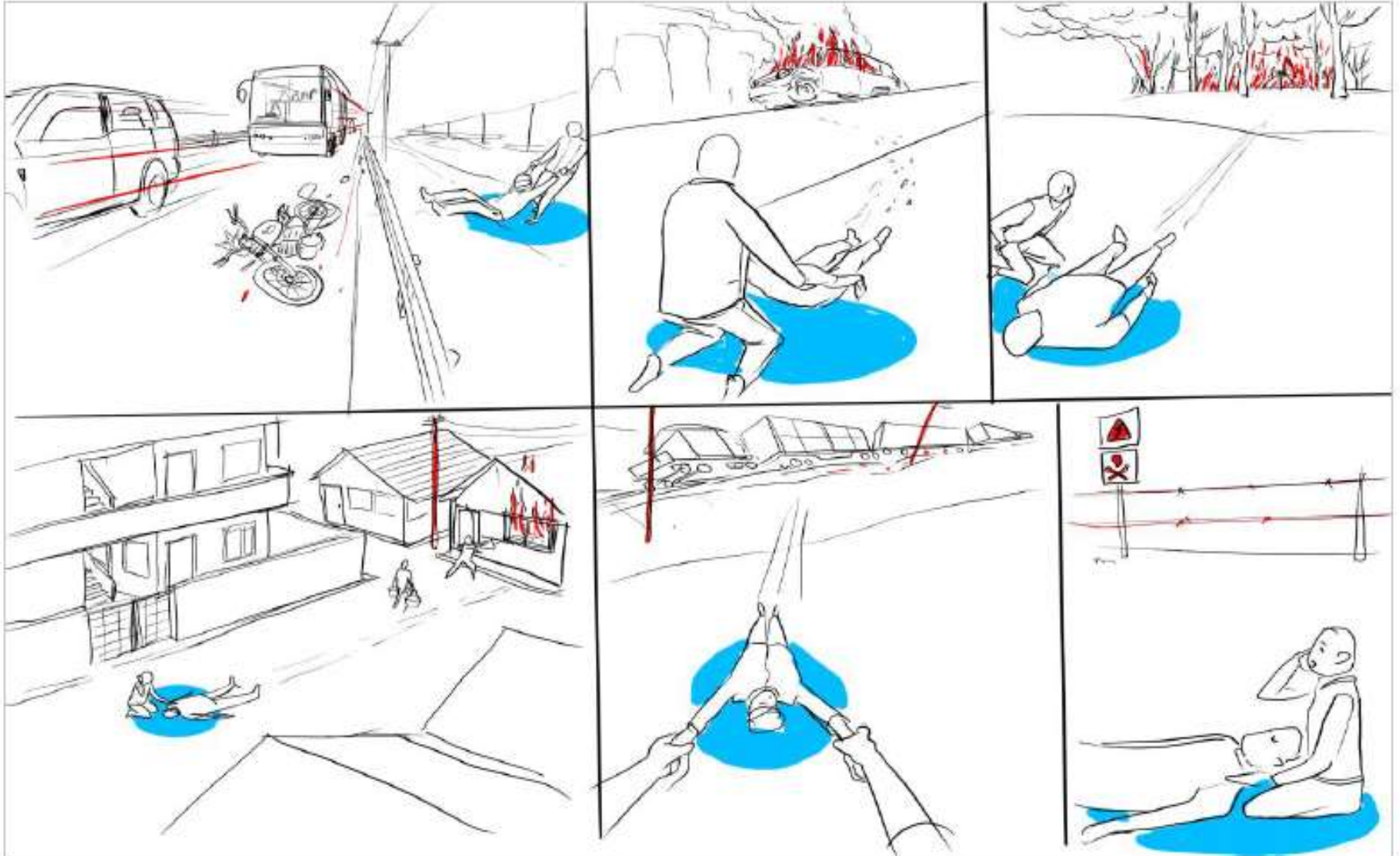
Bystanders



Look around the scene to ensure no imminent danger or  
भौतिक खतरों के लिए स्थान की जांच करें

Ensure Safe place दृश्य सुरक्षा

Patient to be shifted to safe place



# Check response



**Shake and shout**  
**Are you all right?**

**If he can talk**

- **Give your identity**
- **Ask him what is wrong with him?**
- **Find out problem**
- **Call 108**
- **Provide first aid if required**
- **Reassess regularly**

**If does not respond**

**???**



**Shout for help  
Get AED**

**If other person responds to you**

**Ask him to call 108**

**and come back for your help**

# If you are alone

**Call 108**  
**Use Mobile on speaker**

**Identify yourself and give Information**

A- **A**ge

A- **A**rea      **Where you are**

A- **A**ppropriate condition of victim

A- **A**ED



**If victims are more than one:**  
**No of victim**  
**No. of rescuer required**





**Check pulse and breathing  
simultaneously**



## How to Check pulse? Feel for carotid artery

- **Locate trachea, using 2- 3 fingers**
- **Slide fingers in groove between trachea and muscles at side of neck**
- **Palpate artery for 5 -10 sec**
- **Chant 1001,1002.....1010**



**Simultaneously scan chest/abdomen for breathing**  
**See if Chest rise and fall occurs regularly**



# If no response

But

**pulse is present and breathing normally**

- Remain with him
- Recovery position
- Monitor closely
- Reassess regularly



©ERC

**If no response**  
**pulse is present but**  
**Breathing is absent or not normal**

**Provide 1 breath every 5-6 seconds**

**Check pulse every 2 min**



If breathing is not normal or gasping  
**sign of cardiac arrest**



**If**

**No Response**

**No Pulse**

**No Breathing**

**Start CPR**

**C-A-B**

# **C-A-B**

**C**IRCULATION

**30 chest compression**

**A**IRWAY

**Head tilt chean lift**

**B**REATHING

**2 Breaths**

# Circulation

## 30 Chest compression



**Position:**

**Victim- Supine**

**Provider- By the side of victim**

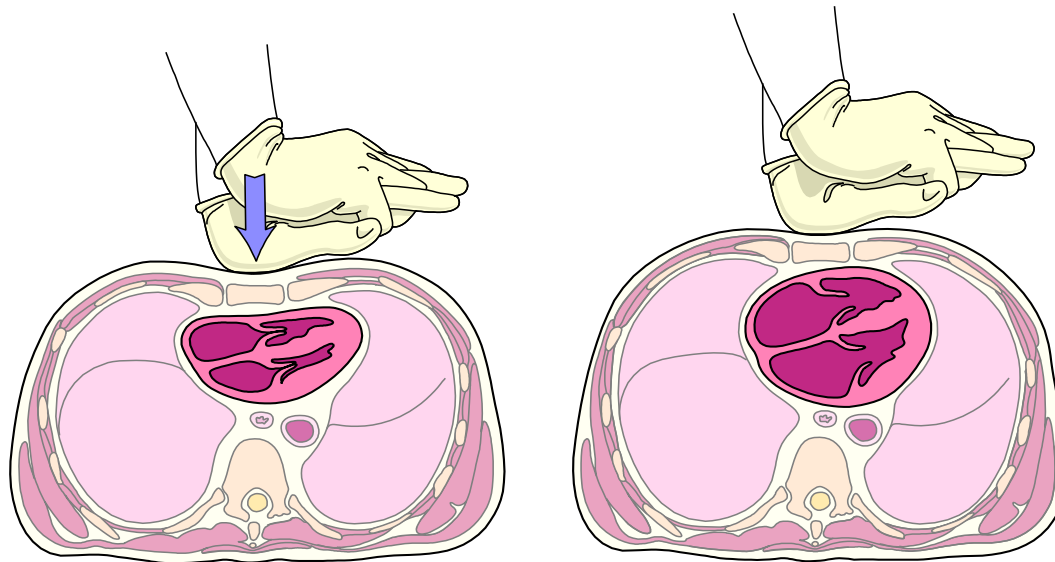


# Chest compression



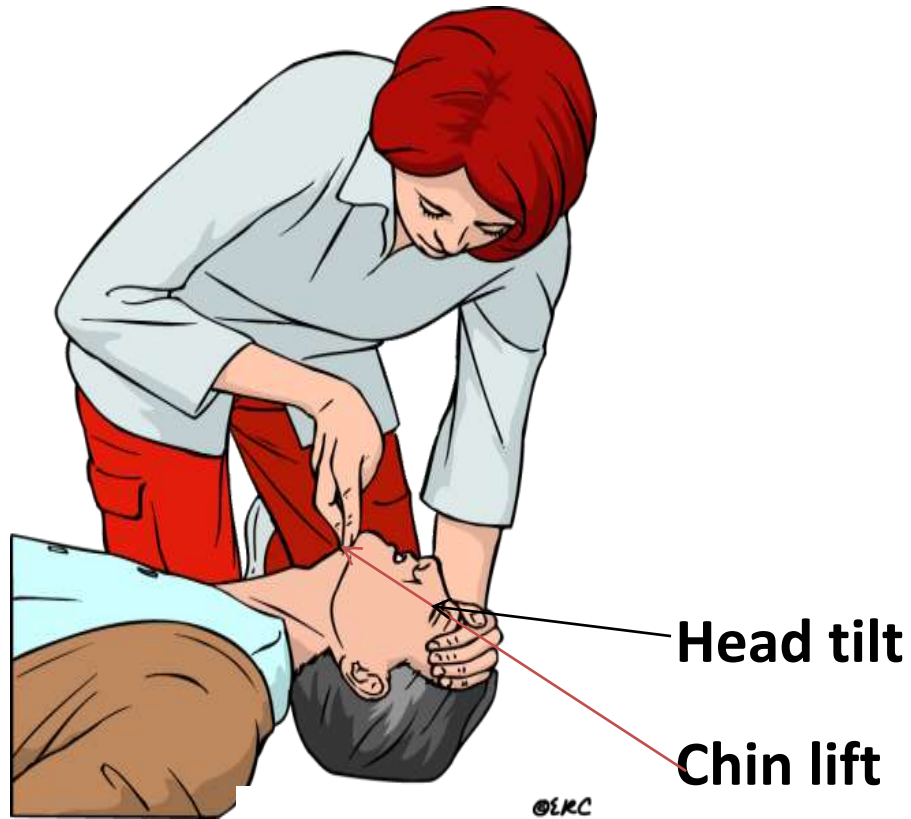
- Expose chest
- Place one heel in centre of chest
- Place other hand on top
- Interlock fingers
- Compress
  - At a rate of **100-120/min**
  - Depth **2- 2.4 inch (5-6 cm)**
  - Equal compression : relaxation
- When possible change provider every 2 min

# How compression works?



# Airway

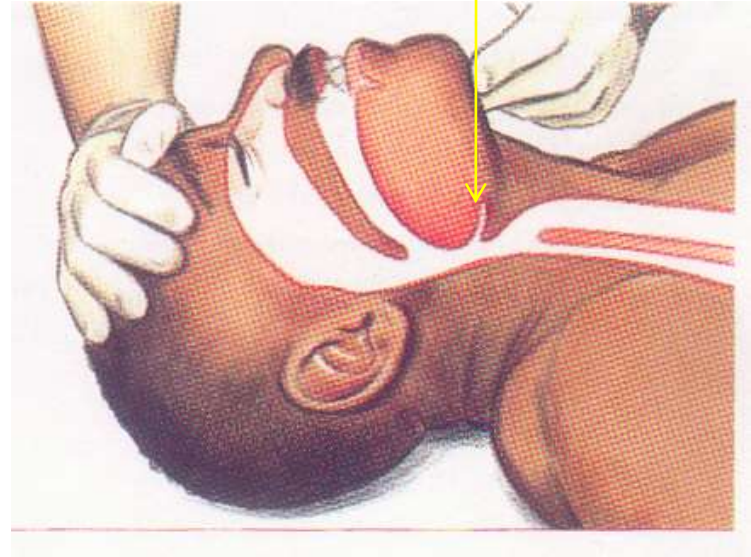
## Open airway



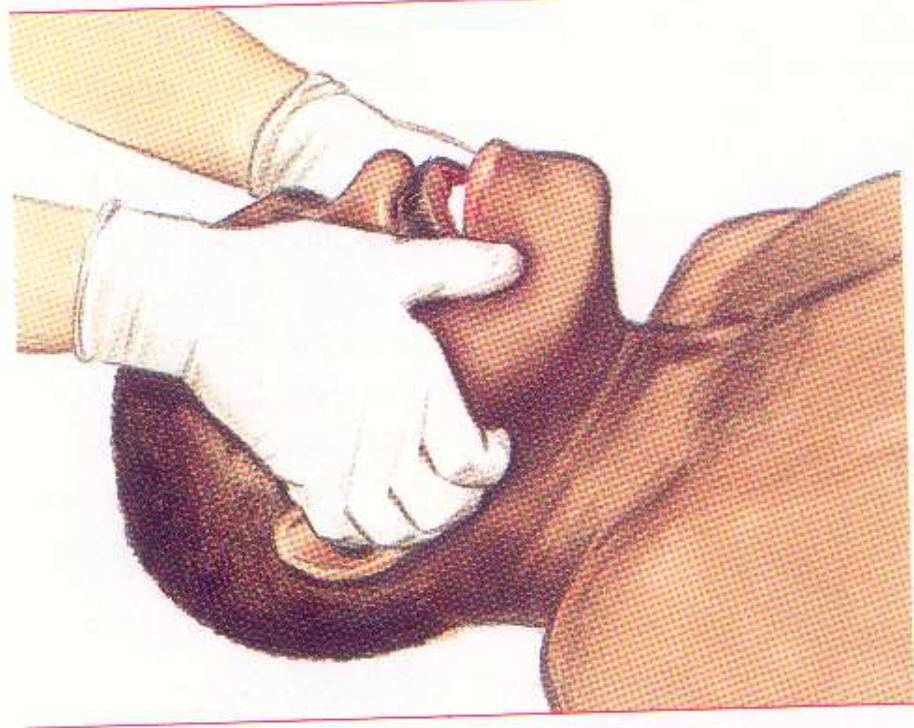
Why



Open airway

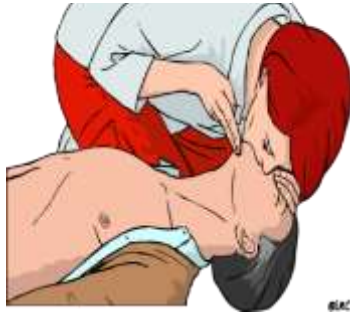


**If suspected head or neck injury**  
**Do not move head and neck**  
**Do Jaw thrust only**

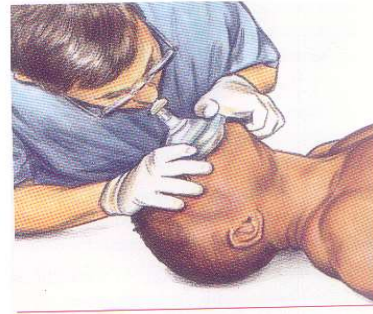


# Breathing

Give 2 breaths



**Mouth to Mouth**



**Mask to Mouth**



**Bag and Mask**

# Mouth to mouth- Quick & effective provides 17% Oxygen

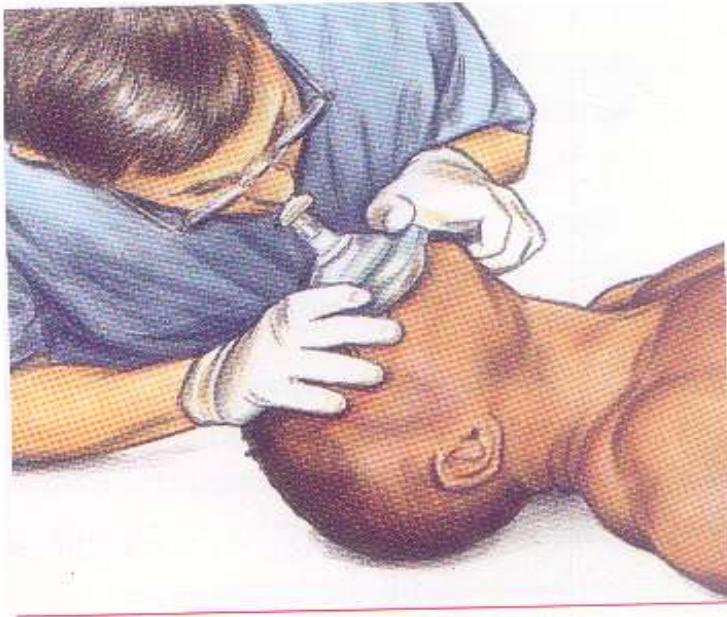
- Place clean cloth over victim's mouth
- Do Head tilt, chin lift
- Pinch nose
- Take normal breath
- Put your mouth over victim's mouth
- Provide 1 breath over 1 sec till chest rises
- Allow chest to fall
- Give 2<sup>nd</sup> breath



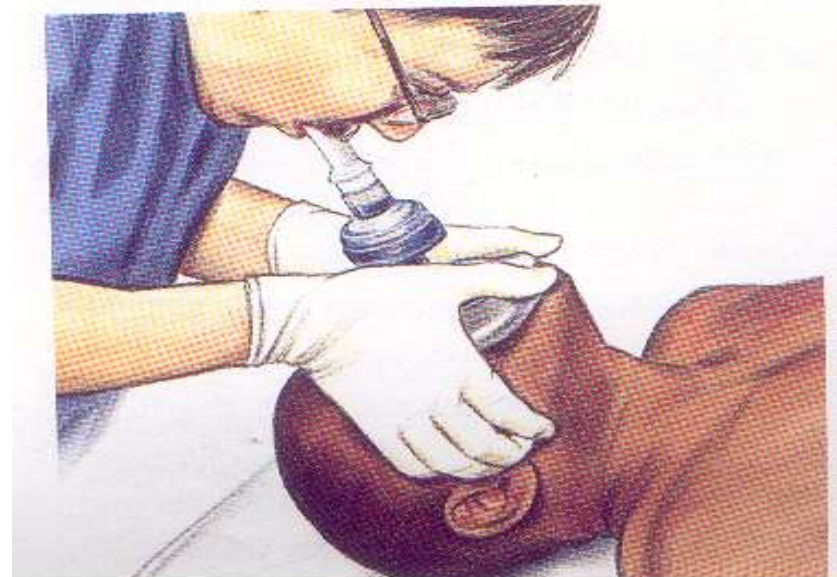
**Return to chest compression**

# Pocket mask :

**If you are alone**  
**From side**



**If 2 rescuers**  
**From Head end**





# Bag-valve mask

Available with 108 and all ambulance



**Bag & mask**



**E- C clamp**

# CONTINUE CPR

5 cycles of

**30 Compression**



**2 Ventilation**



**Till**

- Qualified help arrives and takes over
- Victim starts moving or breathing normally
- Rescuer becomes exhausted
- Scene becomes dangerous

## Putting it all together

- Assess victim for response
  - If **no response**, shout for help/Get AED
- If alone, call **108**  
Use your mobile on speaker mode
  - Get an AED if available
- Check victim's breathing & pulse in 5- 10 sec
- **No breathing      No pulse**
- **CPR by C-A-B**
- 30 chest compression
- Open airway
- Give 2 breath
- **Repeat at 30:2 for 5 times**
- Reassess for pulse and breathing
- **Continue CPR**

# Two rescuers



# CPR for Children

**Above 8 years**

Similar for adults- **30:2**

# CPR for Children - 1-8 yrs

## Main 3 difference

1 If you are alone give 2 min. CPR before calling 108

2 Use heel of one/two hands for chest compression

3 Press sternum approximately 1/3<sup>rd</sup> depth of chest



**1 rescuer 30:2**

**2 rescuer 15:2**

# CPR for Infants [Age <1]

- **Gently tap child on foot**  
If no response, make supine on his back
- **Check brachial artery for pulse**
- **If no pulse or pulse < 60/min start CPR by C-A-B**



# Infant compressions

➤ **1 rescuer**

**2 finger  
30:2**



**2 fingers in center of chest just below nipples**

➤ **2 rescuer**

**2 thumb  
encircling chest  
15:2**



**Keep head neutral No head tilt chin lift**

**Depth- At least 1/3<sup>rd</sup> of chest (1½ inches or 4 cm)**



# Complications of CPR

- Vomiting and **Aspiration:**

- Place victim on left side

- Wipe vomit from mouth with fingers wrapped in a cloth

- Reposition and resume CPR

- **Injury**

- **Rib fracture:**

- Reposition your hand continue CPR

# CPR May Fail

- **Delay in starting**
- **Improper procedures**
  - Forget to pinch nose**
- **No ACLS follow-up and delay in defibrillation**
- **Massive cardiac arrest**

- **After revival from CPR:**

**If patient breathing spontaneously:**

- **Administer oxygen**

- **If patient has pulse but no normal breathing**

**Assist ventilation at a rate**

**1 breath every 5-6 sec (10/min.)**

**same for all - Adult, children and infant**

**Check pulse every 2 min**

# If victim has pulse and start breathing normally place in recovery position



1



2



3



©IRC

4



**Approach safely**

**Check response**

**Shout for help**

**Call 108/ Get AED**

**Use mobile on speaker**

**Check Pulse & Breathing**

**Open airway**

**Give 2 breath**



# **BLS**

**By:**

**DR HARSHA MAKWANA**

**Professor & Head**

**Emergency Medicine Department**

**LG hospital**

**AMCMET Medical College**

**Ahmedabad**

**Approach safely**

**Check response**

**Shout for help**

**Call 108**

**Open airway**

**Check breathing**

**Attach AED**

**Follow voice prompts**

# AED Automated External Defibrillator





# AED

Use as soon as available



**Continue CPR till AED is ready to use**

# How to use?

**Power on**



**Attach pads to victim's bare chest**

**Continue CPR  
Till  
pads are attached**



**Analyse Rhythm**

**Do not touch victim**

**Shock indicated**

- **Stand clear**
- **Deliver shock**



**Shock delivered**

**Follow **AED** Instructions  
Continue CPR**



**30**



**2**

**No shock advised**

**Follow AED instructions**  
**Continue CPR**



**30**



**2**

## USE of AED in children

### 1-8 years of age

-Child pads are used

-If not available, use adult pads

but take care, pads do not touch each other

### >8 years

-Use only adult pads

-Do not use child pads

Or child key on AED

**Use of adult dose is better than no attempt at defibrillation!**

# Use of AED in infants

- No evidence
- No recommendation





**Approach safely**

**Check response**

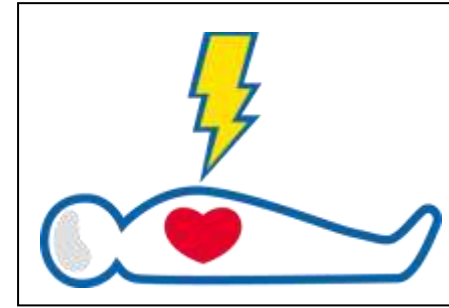
**Shout for help**

**Call 108**

**30 chest compressions**

**Open airway**

**Give 2 breaths**



**Approach safely**

**Check response**

**Shout for help**

**Call 108**

**Open airway**

**Check breathing**

**Attach AED**

**Follow voice prompts**

## Major life threatening emergencies

- **1. Cardiac arrest**
- **2. Heart attack**
- **3. Stroke**
- **4. Choking**



# Heart attack

Lack of blood and Oxygen to an area of heart for > 15-20 min.

## Symptoms

- Chest pain or chest discomfort  
>15 minutes  
not relieved by rest or nitro glycerin  
spreads to neck arm or shoulder
- Tightness or heaviness in chest
- Shortness of breath
- Sweating
- Syncope
- Nausea and vomiting



**Call 108 immediately**

## **What to do?**

**Ask if he is taking medication for any heart problem**

**Give his medicines**

**Tab Sorbitrate (Nitroglycerine) below the tongue  
up to 3 doses at 5 minute interval**

**Tab Aspirin 150 mg to chew 2 tab**

**Tab. Clopidogril**

**Transport earliest to hospital.**

# Stroke

Rapid loss of brain function due to disturbance in blood supply

Mostly in >50 yrs of age having BP, diabetes or heart problem



Affected part can't function normally and there is:

- Weakness of face, arm or leg on one side of body
- Sudden difficulty in moving, speaking or understanding
- Severe headache without reason
- Vision problem
- Confusion

**F**- Face problem  
**A**- Arm drop  
**S**- Slurred speech,  
Salivation  
**T**- Transport

**Call 108 immediately**

# Choking

**Foreign body in Airway causing difficulty in breathing**

**Universal Choking Sign**



## **SEVERE**

**Unable to speak**

**Weak, ineffective or no cough**

**High- pitched noise**

**Difficulty in breathing**

**Call for help or 108**

**Relieve obstruction by abdominal thrusts**

**If becomes unresponsive start CPR**

# How to relieve choking

Infant:

**Back slaps**



**Finger sweep**

Sweep your finger through the child's or infant's mouth to remove debris

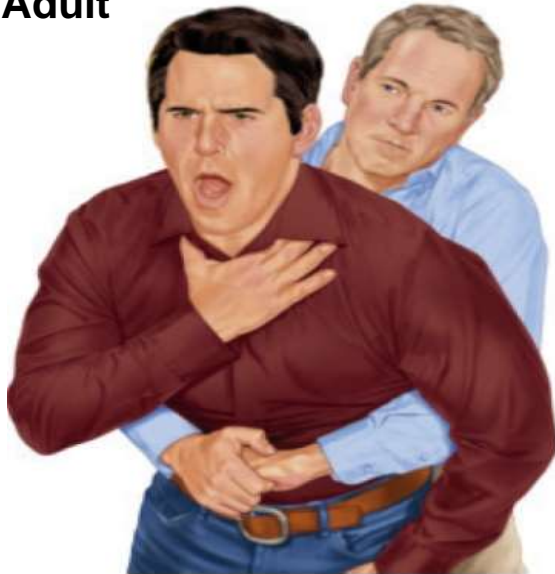


**Chest thrusts**

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



Adult



**Heimlich Manoeuvre**

**Treat a choking child (1-8 yrs old) like adult**



# Emergency Situation to act immediately

- **Accidents**
- **Poisoning**
- **Drug overdose/Reaction**
- **Smoke Inhalation**
- **Epilepsy**
- **Suffocation**
- **Drowning**
- **Electrocution**
- **Heat Exhaustion**

**THANK YOU**

# MCQ for CPR

**Q 1** What does CPR stand for?

- A** Call, Plan, Respond
- B** Cardio-Pulmonary Resuscitation
- C** Coronary-Pulmonary Resuscitation
- D** Cardio-Pulmonary Rehabilitation



**Q 2 New guidelines recommends following sequence in CPR?**

**A=Airway**

**B=Breathing**

**C=Circulation**

**A A-B-C**

**B B-C-A**

**C C-A-B**

**D A-C-B**

**Q 3** If you find someone collapsed,  
the first thing you should do is...

**A** Check for danger

**B** Try to wake up him

**C** Check if he is breathing

**D** Call for help

**Q 4 When checking for circulation/pulse you should locate**

**A Carotid artery if victim is a child**

**B Brachial artery if victim is an infant**

**C Carotid artery if victim is an adult**

**D All of above**

**Q 5 How long you should check for pulse?**

**A Up to 5 seconds**

**B 5 to 10 seconds**

**C Up to 10 seconds**

**D There is no limit**

**Q 6 The site for chest compression in adult is:**

**A On upper part of sternum**

**B In centre of sternum and between nipple lines**

**C In centre of chest and between nipple lines**

**D Over the abdomen**

**Q 7** During CPR chest compressions should be  
\_\_\_\_/ min

**A** 60-80

**B** 80-100

**C** 100-120

**D** 120-140

**Q 8 The ratio of compression to ventilation in adult CPR is\_\_\_\_\_**

**A 15:1**

**B 15:2**

**C 30:1**

**D 30:2**

**Q 9** If you feel a rib break during chest compressions  
What should you do?

- A** Immediately stop CPR
- B** Reposition hands correctly and continue CPR
- C** Provide rescue breaths only
- D** Do nothing



**Q 10 How should you open someone's airway?**

**A Tilt head to one side**

**B Head tilt chin lift**

**C Pull tongue using your fingers**

**D Do nothing- you should not move them**

**Q 11 I will continue chest compressions  
while an AED is analyzing rhythm**

**A Yes**

**B No**

**Q 12 Immediately after giving shock with AED,  
you should:**

**A Analyze cardiac rhythm**

**B Check for pulse**

**C Resume CPR**

**D Deliver another shock if indicated**

**Q 13 We can use adult pads for AED in children if child pads are not available**

**A Yes**

**B No**

**Q 14 I will start Chest compressions in infant  
if heart rate is < 60/minute  
despite adequate oxygenation and ventilation**

**A Yes**

**B No**

**Q 15 When one should stop CPR?**

- A Victim shows signs of life**
- B Provider exhausted to continue**
- C Scene becomes dangerous**
- D All of above**