DEPARTMENT OF MEDICAL SURGICAL NURSING

Best Practice - Basic Life Support (BLS)

Basic Life Support (BLS) is a level of medical care which is used for victims of life-threatening illnesses or injuries until they can be given full medical care at a hospital. It can be provided by trained medical personnel, including emergency medical technicians, paramedics and by qualified bystanders.

Assess, Recognize and Care

The Assess, Recognize and Care concept is a systematic, continuous approach for rapid assessment, accurate recognition and immediate care in emergency situations. An acutely ill patient's condition can change rapidly, and deterioration can follow; therefore, frequent assessment, recognition and care are critical. Some steps are completed simultaneously, and you should repeat these steps until the patient is stabilized and/or transferred to a higher level of care for further management

Rapid Assessment

The Assess, Recognize and Care concept begins with a rapid assessment, which includes performing a visual survey, checking responsiveness, opening the airway and simultaneously checking for breathing and a pulse. The information gathered during the rapid assessment provides critical information and helps you to recognize whether a life-threatening emergency is occurring so that you can provide effective care.

Check for Responsiveness

Once the visual survey is complete, the next step is to check for responsiveness. This may be obvious from your initial impression. For example, the patient may be able to speak to you or may be moaning, crying or moving around. If the patient is responsive, obtain consent and provide care as appropriate.

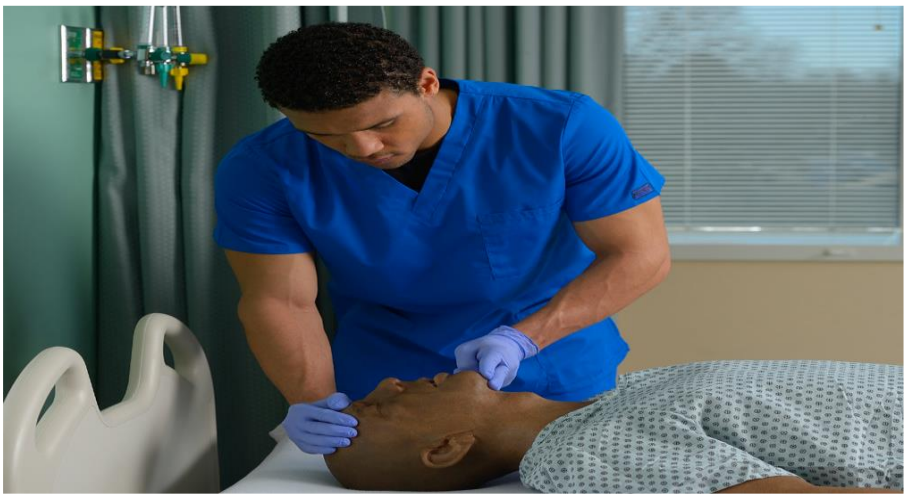
If the patient appears unresponsive, use the shout-tap-shout sequence to obtain a response to a verbal or tactile stimulus.Observe for the patient's response to the stimulus. It may be

subtle—some slight movement or momentary eye opening. If the patient is unresponsive, call for someone to activate the emergency response system and get an AED if you have not already done so.

Open the Airway

If the patient is unresponsive, open the airway, making sure the patient is in a supine (face-up) position. If they are face-down, you must roll them onto their back, taking care not to create or worsen a suspected injury. Then, open the airway using the head-tilt/chin-lift technique. Or use a modified jaw-thrust maneuver if a head, neck or spinal injury is suspected.

Head-Tilt/Chin-Lift Technique



- ✓ To perform the head-tilt/chin-lift on an adult:
- ✓ Press down on the forehead with one hand while pulling up on the bony underside of the chin with two to three fingers of the other hand.
- ✓ Tilt the head to a past-neutral position to open the airway

Modified Jaw-Thrust Maneuver

When a patient has a suspected head, neck or spinal injury, use the modified jaw-thrust maneuver to open the airway. For this maneuver, position yourself above the patient's head and:

✓ Put one hand on each side of the patient's head with your thumbs near the corners of the mouth and pointed toward the chin. Use your elbows for support.

✓ Slide your fingers under the angles of the jawbone without moving the patient's head or neck.

✓ Thrust the jaw up (again without moving the head or neck) to lift the jaw and open the airway

Check Breathing and Pulse

Simultaneously check for breathing and a carotid pulse for at least 5 seconds but no more than 10.

When check for breathing, look to see if the patient's chest is rising and falling, listen for escaping air and feel for breathing against the side of your cheek. Remember, normal breathing is quiet, regular and effortless. Agonal breaths, or isolated or infrequent gasps, are not normal breathing.

Recognize and Care

After gathered information about the patient and the emergency throughout the rapid assessment. Now, you'll use the results of your assessment to recognize the emergency condition and determine your immediate course of action. Emergencies requiring basic life

support may include injury or illness, respiratory arrest, cardiac arrest, obstructed airway and opioid overdose.

Chest Compressions

When providing chest compressions for an adult, proper technique is critical:

- ❖ Ensure that the patient is on a firm, flat surface. In a healthcare setting, use a bed with a CPR feature, or place a CPR board under the patient. In other settings, move the patient to the floor or ground before beginning CPR.
- ❖ If the patient is on a bed, adjust it to the appropriate working height or use a step stool. Lower the bed side rail closest to you. If the patient is on the ground, kneel beside them.
- ❖ Expose the patient's chest so you can ensure proper hand placement and visualize chest recoil.
- ❖ Place the heel of one hand in the center of the patient's chest on the lower half of the sternum. Place your other hand on top of the first and interlace your fingers or hold them up so that they are not resting on the patient's chest
- ❖ Position yourself so your shoulders are directly over your hands.
- ❖ Keep your arms straight and lock your elbows.
- ❖ Compress the chest using a straight up-and-down motion. This allows you to use your body weight rather than your muscular strength, which is more effective and less tiring.
- ❖ For an adult, compress the chest to a depth of at least 2 inches (5 cm). If you are using a feedback device, make sure the compressions are no more than 2.4 inches (6 cm) deep.
- ❖ Provide smooth compressions at a rate of at least 100 per minute but not more than 120 per minute.

❖ Allow the chest to return to its normal position after each compression, achieving complete chest recoil. Avoid leaning on the patient's chest during compressions because doing so impedes venous return and prevents the heart from filling completely. This, in turn, decreases cardiac output.

❖ Ventilations supply oxygen to a patient who is not breathing. Like compressions, ventilations require proper technique

❖ For a patient in *cardiac arrest*, deliver 2 ventilations that last approximately 1 second each and make the chest begin to rise.

❖ For a patient in *respiratory arrest*, deliver 1 ventilation every 5 to 6 seconds; each ventilation should last about 1 second and make the chest begin to rise. Check the pulse and breathing about every 2 minutes. If the patient does not have a pulse, begin CPR.

❖ Do not hyperventilate or over ventilate the patient

Chain of survival

The medical algorithm for providing basic life support to adults in the USA was published in 2005 in the journal *Circulation* by the American Heart Association.

The AHA uses a four-link "chain of survival" to illustrate the steps needed to resuscitate a collapsed victim:

1. Early recognition of the emergency and activation of emergency medical services
2. Early bystander CPR, so as not to delay treatment until arrival of EMS
3. Early use of a defibrillator
4. Early advanced life support and post-resuscitation care

The AHA-recommended steps for resuscitation are known as DRS CABCDE:

1. Check for *D*anger
2. Check for a *R*esponse
3. *S*end or shout for help
4. *C* directs rescuers to first attend to Catastrophic haemorrhage (life-threatening bleeding) and to stop the bleeding if possible.
5. *A* directs rescuers to open the Airway and look into the mouth for obvious obstruction. Also to apply a 'head tilt chin lift' or 'jaw thrust' to open the airway.
6. *B* directs rescuers to check Breathing for 10 seconds by listening for breath at the patients nose and mouth and observe the chest for regular rising and falling breathing movements.
7. *C* directs rescuers to maintain Circulation which may be through administration of chest compressions for Cardio Pulmonary Resuscitation (CPR).
8. *D* directs rescuers to identify Disabilities (e.g. diabetic or any allergies), Damage (identify broken bones or any minor bleeding), Devices (including use of AED

devices available and follow prompts) and Dry (if casualty is very wet, an AED device will pass current through body surface water and will harm the casualty).

9. *E* directs rescuers to take the environment into consideration for weather, location and crowds.

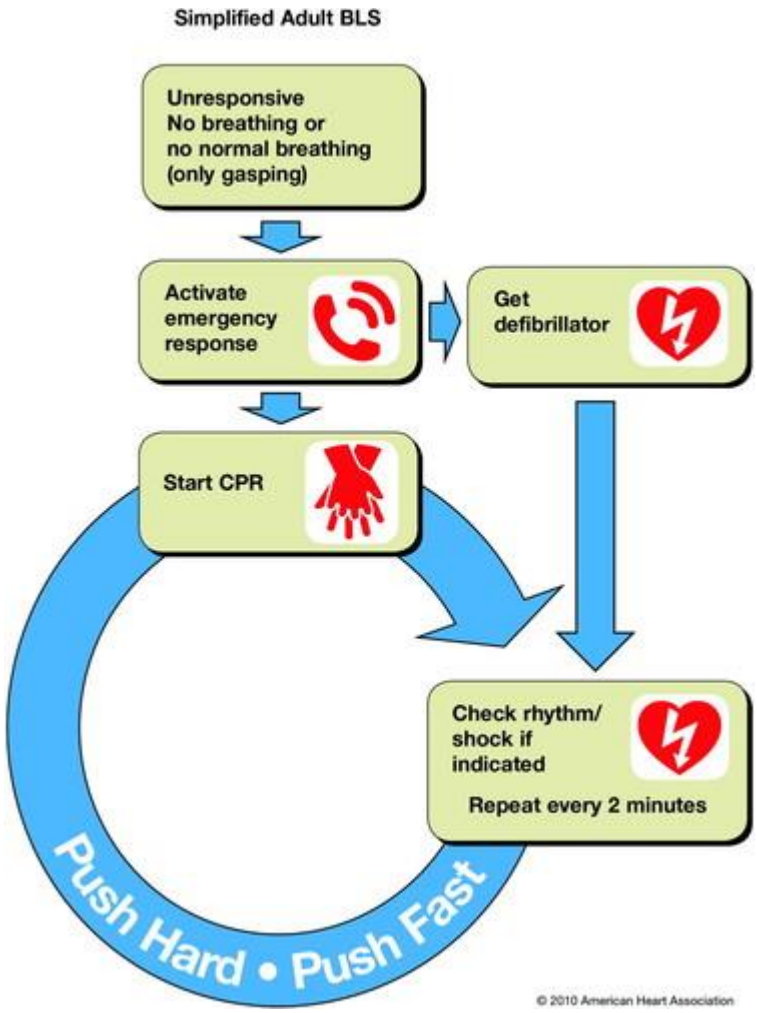
If the patient is unresponsive and not breathing, the responder begins CPR with chest compressions at a rate of 120 beats per minute in cycles of 30 chest compressions to 2 breaths. If responders are unwilling or unable to perform rescue breathing, they are to perform compression-only CPR, because any attempt at resuscitation is better than no attempt. For children, for whom the main cause of cardiac arrest is from breathing related issues, 5 initial rescue breaths is highly advised followed by the same 30-2 cycles.

BLS for Healthcare Providers Course

According to the American Heart Association, in order to be certified in BLS, a student must take an online or in-person course. However, an online BLS course must be followed with an in-person skills session in order to obtain a certification issued by The American Heart Association.[9]

Adult BLS sequence

- C-A-B is recommended in the new AHA EU guidelines so as to ensure the blood supply to the vital organs and to prevent degeneration of the brain cells. Keeping these facts as such follow the sequence introduced by AHA guidelines 2010 recommendations C-A-B should be followed in learning and teaching BLS.
- Ensure that the scene is safe.
- Assess the victim's level of consciousness by asking loudly and shaking at the shoulders "Are you okay?" and scan chest for breathing movement visually. If no response call for help by shouting for an ambulance and ask for an AED.



Assess:* If the patient is breathing normally, and pulse is present then the patient should be placed in the recovery position and monitored. Transport if required, or wait for the EMS to arrive and take over.

- If patient is not breathing assess pulse at the carotid on your side for an adult, at the brachial for a child and infant for 6 seconds and not more than 10 seconds; begin immediately with chest compressions at a rate of 30 chest compressions in 18 seconds followed by two rescue breaths in 4 seconds each lasting for 2 second.

If the victim has no suspected cervical spine trauma, open the airway using the head-tilt/chin-lift maneuver; if the victim has suspected neck trauma, the airway should be opened with the jaw-thrust technique. If the jaw-thrust is ineffective at opening/maintaining the airway, a very careful head-tilt/chin-lift should be performed.

- Blind finger-sweeps are strongly discouraged and should never be performed, as they may push foreign objects further into the airway. This procedure has been discarded from

current practice as this may push the foreign body down the airway and increase chances of an obstruction.

Continue chest compression at a rate of 100 compressions per minute for all age groups, allowing chest to recoil in between. For adults push up to 2-2.4 inches (6 cm) and for child up to 2 inches (5 cm). For infants 1-1.5 inches (4 cm) or 1/3 of the chest diameter antero-posteriorly.

- Keep counting aloud. Press hard and fast maintaining the rate of at about 100/minute. Allow recoil of chest fully between each compression. In adults, irrespective of the number or rescuers, for every 30 chest compressions give two rescue breaths and in child victim, give 2 breaths per 30 compression if only 1 rescuer is present, but 2 breaths per 15 compressions in case where there are 2 rescuers.
- Continue for five cycles or two minutes before re-assessing pulse.
- Attempt to administer two artificial ventilations using the mouth-to-mouth technique, or a bag-valve-mask (BVM). The mouth-to-mouth technique is no longer recommended, unless a face shield is present. Verify that the chest rises and falls; if it does not, reposition (i.e. re-open) the airway using the appropriate technique and try again. If ventilation is still unsuccessful, and the victim is unconscious, it is possible that they have a foreign body in their airway. Begin chest compressions, stopping every 30 compressions, re-checking the airway for obstructions, removing any found, and re-attempting ventilation.

PRINCIPAL
VINAYAKA MISSIONS COLLEGE OF NURSING,
KIRUMAMPAKKAM, PUDUCHERRY - 607 403.

HOD in Department of MSN **PRINCIPAL**