Year 2 MBChB
Clinical Skills Session
BLS
**Learning objectives**
To be able to perform basic life support

**Basic life support**
You need to be able to carry out effective basic life support until expert help arrives. That expert help will be different depending where the incident has happened!

On the street – a first responder with an automated defibrillator or the paramedics

In a GP surgery – The staff who will be trained and possibly have a defibrillator or the paramedics.

On a hospital ward – the cardiac arrest team or medical emergency team

**Assessment of the collapsed patient (DR SCAB)**
Be systematic in how you approach and assess a collapsed patient. Doing so may save you from harm and provide the best chance for your patient.

D.R.S.C.A.B. is an approach that will allow you to achieve this.

D – DANGER
R – RESPONSE
S – SHOUT FOR HELP
C – CLEAR AIRWAY
A – OPEN AIRWAY
B – BREATHING ASSESSMENT

**Danger**
Ensure that the environment is safe! We can all think of hazards outside of hospital as well as potential hazards in hospital.

- Wet floors
- Trailing cables

Safety of both victim AND rescuer are just as important. Patients in hospitals can collapse anywhere, not just in clinical environments!!

If you can’t make the environment safe, then get other agencies (Fire brigade, police etc) to make the environment safe.

**Response**

Check to see if the patient is responsive." **Shake and Shout.** Stabilise the patients’ head and then shake them by the shoulder, at the same time shout loudly “Are you alright” to see if the person responds.
**Shout**

Shout for “help” – You may be alone but someone may hear you and come to your aid.

If someone does come to assist you, continue your assessment of the patient so you can give them clear instruction with relevant information before sending them to get help. Before they go for help, make sure they have understood what is needed.

**Clear airway**

Keeping the head and neck stable, check inside the mouth. You can remove any visible obstruction or loose fitting dentures that are within easy reach with your fore finger.

Leave well-fitting dentures in place this will help when using the pocket mask as it gives the face structure.

Do not under any circumstances do a blind finger sweep this risks pushing the tongue or non-visible objects further into the airway potentially leading to a complete obstruction of the airway. (Only remove foreign objects if appropriate and safe to do so)

**Airway opening**

Open the airway with a head tilt & chin lift manoeuvre.

Place your fingers under the patient’s chin; lift the chin upwards and gently push on the forehead to help tilt the head.

The head will then be flexed with the mandible elevated.

This manoeuvre is of paramount importance, if you cannot achieve a clear airway, then the patient cannot be effectively oxygenated.

**Breathing**

You now need to assess the patient’s breathing by maintaining the head tilt, chin lift (this keeps the airway patent) and using the technique of - **Look, Listen, Feel**

- **Look** to see if the chest is rising and falling
- **Listen** over the mouth can you hear any breath sounds
- **Feel** on the side of your face for any breathing from the patient’s mouth / nose.

This should be done for no more than 10 seconds

If in any doubt that breathing is absent or not normal, act as if the patient is not breathing and provide ventilations (breaths).

You are also looking for any **signs of life**, these may include: movements, colour change in the patient’s face and/or eyes flickering.
If the patient is breathing normally then you should place them in the recovery position if safe to do so.

Continue assessing the patient’s breathing and either send for some help or call for help. You must re-evaluate the patient’s airway and breathing to ensure there is no deterioration. If there is, then you can intervene following the BLS protocols.

**Getting help – S.B.A.R.**

Once you have established that the patient is not breathing you now need to ensure that help is on the way. Help may be on the way as a result of your initial shouts for help or if you activated the emergency alarm in a clinical area. If no one has responded to your shouting or activating the alarm, you will now need to leave your patient and phone for help.

Outside of hospital it is 999

In hospitals the emergency is 2222.

Once you are through to the operator whether inside or outside of hospital you can use the following communication tool. S.B.A.R. to give sufficient information.

S  situation  cardiac arrest in location X.

B  background  patient found collapsed.

A  assessment  patient’s Airway & Breathing assessed with no breathing detected.

R  recommendations  require the medical emergency team (M.E.T) to come to ward X with the resuscitation equipment.

It is worth asking the operator to repeat back to you what you’ve told them. This ensures that your message has been understood and so minimises any errors. This is known as a closed communication loop.

Once you’ve made your call, return to your patient to start chest compressions.

**Chest compressions**

Ensure you are at an appropriate level beside the patient; this will depend where the patient is i.e. in bed, on the floor.

Place the heel of one hand in the centre of the patient’s chest and then place the heel of your other hand on top of the first hand.

Interlock your fingers, ensure your arms are straight and that the heel of your hand is at the midpoint of the sternum between the sternal notch and xiphisternum.

Depress sternum to a depth of 5 cm (no more than 6 cm) approx. 1/3 of chest. Then release the pressure on the chest and repeat until 30 compressions have been completed.

**Minute rate of chest compressions**

Compressions should be applied at a rate of 100 to 120 per minute. These compressions should be rhythmical in nature.

Avoid applying pressure over the upper sternum or the xiphisternum/ top end of the abdomen.
Remember you need to deliver 30 compressions. So, you may want to count these out. Once you have delivered 30 compressions you need to give 2 ventilations.

**Ventilations**

**Mouth to Mouth**

Re-establish the head tilt – chin lift, then pinch the soft part of the patient’s nose with your thumb and forefinger.

Open the mouth remembering to maintain the head tilt – chin lift.

Take a good breath and place your lips around the casualty’s mouth and blow gently.

You are going to try and give two effective ventilations.

**Effective ventilations**

An effective ventilation is when you can see the patient’s chest rise. This is achieved by blowing steadily over 1 second.

Watch for the chest to rise, this is not always easily seen and if you have help they can watch for this.

Once you have given a breath move your mouth away and look at the chest as it falls. By doing this you also avoid inhaling the patient’s expired breath. Repeat this again for a second time and then return to compressions.

Continue basic life support at a ratio of 30 compressions to 2 ventilations until:

- help arrives
- the condition of the patient changes
- or you are physically exhausted and cannot continue

**Using a Pocket-mask to deliver ventilations**

A pocket mask allows for easier ventilations and is a more hygienic approach as it incorporates a non-return valve that prevents any unwanted secretions reaching the user from the patient.

**Setting up a pocket Mask**
1. Remove the mask and valve from the case
2. Push out the soft dome with your fingers
3. Ensure that the one way valve is in place (it will only fit on one way)

Using the pocket mask with no additional oxygen is the same as mouth to mouth and will provide 16% O₂ concentration to the patient as it is expired air ventilation.

*Some pocket masks allow the addition of high flow (10-15 litres/min) oxygen supply which can improve oxygenation markedly and deliver between 45-50% concentration to the patient.

**Your position**

When using a pocket mask it is easier if you position yourself by the top of the patient’s head (See adjacent picture).

If you cannot get to stand in line with the top your patient’s head, then it is possible to stand to the side of the patient as you would do if you were doing mouth to mouth and use the pocket mask.

**Technique of using pocket-mask**

Place the mask over the patient’s mouth and nose (there is an arrow on the mask that says nose). Place over the nose first to avoid the eyes then lower the rest of the mask over the mouth.

Use the rim of the mask to retract the lower lip so that the patient’s mouth remains open under the mask.

Use thumbs and index fingers of both hands to hold the mask with your little fingers placed below the ear lobes on the angle of the jaw to provide lift and the remaining fingers placed on the jaw bone to help with the head tilt-chin lift.

Place your mouth around the one way valve and blow into the valve and observe for a rise in the chest.

Remove your mouth from around the valve, observing for the chest falling. Straighten up and take your next breath and if necessary repeat the manoeuvre.

**Problems with ventilations**

If ventilations are not effective do not attempt any more than 2, move straight back to 30 compressions. (Do not break the 30:2 ratio)

Once you have delivered the 30 compressions and before delivering the next 2 ventilations re-check the mouth to see if there are any visible obstructions that may be removed. Do not spend too much time on this to the detriment of providing chest compressions.

Recheck you have an adequate head tilt-chin lift, Try your ventilation(s) again remembering that you do not do any more than 2 attempted ventilations at any one time before returning to providing chest compressions.
If you are unable to do mouth to mouth ventilation (e.g. massive facial trauma) then continuous compressions are advised at a rate of 100 - 120 a minute.

**DON’T STOP CPR UNLESS**
- The patient shows signs of life (If so, reassess patient)
- Help arrives
- You are overcome by exhaustion
  - If the patient begins to show signs of recovery, place them in the recovery position and monitor their Airway & Breathing.
  - Be prepared to recommence basic life support.

**Additional information (Respiratory arrest)**
If the patient has an obvious palpable pulse which is faster than 40 bpm, but is unconscious with absent breathing or very slow. Then you are dealing with respiratory arrest.

In this circumstance obtain help immediately and perform 10 – 12 breaths (1 minutes’ worth of ventilations) followed by an Airway & Breathing assessment. If no change carry on in that loop until help arrives. If the patient becomes pulseless then do full basic life support.


**Recovery Position**

Kneel on the floor to one side of the patient

Place the person’s arm that is nearest you at a right angle to their body, so that it is bent at the elbow with the hand pointing upwards. This will keep it out of the way when you roll them over.

Gently pick up their other hand with your palm against theirs (palm to palm). Now place the back of their hand onto their opposite cheek (for example, against their left cheek if it is their right hand). Keep your hand there to guide and support their head as you roll them.

Use your other arm to reach across to the person’s knee that is furthest from you, and pull it up so that their leg is bent and their foot is flat on the floor.
Gently pull their knee towards you so that they roll over onto their side, facing you. Their body weight should help them to roll over quite easily.

Move the bent leg that is nearest to you, in front of their body so that it is resting on the floor. This position will help to balance them.

Gently raise their chin to tilt their head back slightly, as this will open up their airway and help them to breathe. Check that nothing is blocking their airway. If there is an obstruction, such as food in their mouth, remove this if you can do so safely. Stay with them, giving reassurance, until they have fully recovered.

**Adult basic life support algorithm**

- **Safe to approach**
- **Check responsiveness**
- **Shout for help**
- **Airway opening manoeuvres**
  - **Breathing check**
    - Look, Listen & Feel
  - **Go for help A.E.D. (Automated Emergency Defibrillator) if available**
- **Begin Basic Life Support**
  - Ratio 30:2
  - Rate 100 to 120 / min

*Continue BLS until help arrives, the patient recovers or you are told to stop.*
Choking adult

General signs may occur whilst the victim is talking, eating or drinking. It is not unusual for the victim to be silent and clutching their throat. The way they do so is distinctive and has been adopted as the sign indicating a choking person / victim.

Accompanying the choking gesture is the look of panic in the patient’s face that will also help to alert the rescuer / helper to the gravity of the situation.

Obstruction can be categorised as:

- Mild airway obstruction: Victim is able to breath, cough and speak.
- Severe airway obstruction: The victim may be silent, wheezy, attempting to cough or unconscious.

Managing mild airway obstruction.

If the patient is conscious and able to breathe, despite evidence of partial obstruction encourage them to cough. If conscious but cyanosed, exhausted or there is a complete obstruction urgent intervention is required.

Severe airway obstruction in the conscious patient

As mentioned you would encourage the patient to cough. If this does not work you will need to provide back blows followed by abdominal thrusts; assuming the back blows are ineffective.

To do back blows stand behind and to the side of your patient with one hand placed on the patient’s chest for support with them leaning slightly forwards. Deliver 5 sharp blows to the patient’s back using the heel of your hand, striking the patient between their shoulder blades. (scapulae)

Note that between each back blow you should check to see if the obstructing object has been expelled.

If after the 5th back blow with evaluation the patient is still choking, you should now deliver 5 abdominal thrusts with evaluation between each.

To do abdominal thrusts stand behind the patient but slightly to one side so your hip is presenting to the small of their back. Lean the patient slightly forward and encircle your arms around the patient and form a fist with your dominant hand and with your other hand over the one forming the fist. Your fist should be placed between the umbilicus and xiphisternum. Pull sharply upwards and backwards.

Repeat 5 times with evaluation of the airway between each manoeuvre.

If the object is still insitu return to providing back blows in the manner described above and then back to abdominal thrusts.

If they are still choking and conscious keep providing treatment in this loop whilst the patient remains conscious.

If the patient becomes unconscious lower them to the ground as safely as possible trying not to cause harm to yourself.
Once they are safely on the ground leave the patient and go for help if help has not already been sought and known to be enroute. Emergency telephone number in hospitals is 2222 outside of hospital 999. Having sought help return to the patient and quickly assess airway & breathing and then provide CPR at a ratio of 30 compressions 2 ventilations.

**Handy hints**
- If you were successful in dislodging the obstruction during the delivery of abdominal thrusts, it is advisable the patient attend Accident & Emergency. Abdominal thrusts have the potential to cause trauma.
- If the patient is larger than you and you cannot encircle them with your arms for abdominal thrusts, then continue to provide back blows.
- If they are taller than you. Attempt to get them on to their knees so you have the height advantage.

**Adult Choking Protocol**

- **Assess Severity**
  - Ineffective Cough?
    - **Unconscious?**
      - Go for help
        - Ask for an AED
      - Start BLS at a ratio of 30:2
    - **Conscious?**
      - 5 Back Blows
        - Reassess:
          - 5 Abdominal Thrusts
            - Alternate between these groups of blows & thrusts
          - Becomes Unconscious
      - Deteriorates Proceed to Ineffective Coughing
  - Effective Coughing?
    - Encourage Coughing to Expel Foreign Object
      - Monitor for any deterioration to ineffective cough or relief of obstruction