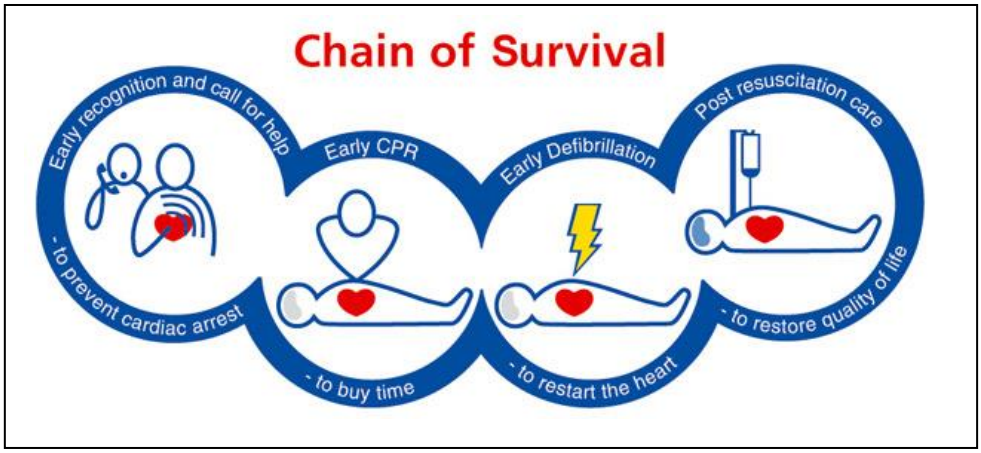
Basic Life Support and Defibrillation using an Automated External Defibrillator (AED)

January 2018

1. Basic Life Support – ADULTS

The Chain of Survival shows four critical steps which, when delivered effectively and in sequence, give the person the best chance of survival.



Danger

- Ensure it is safe to approach the person.
- Think of danger as sight, sound, and smell. Is there anything you can see, hear or smell that might be a danger to you, the person, or any bystanders?

Response

- Check the person by speaking loudly.
- Gently shake the shoulders.
- Shout for help.

Airway

Open the airway by head tilt and chin lift:

- Place two fingers under the point of the chin and gently lift (keep your fingers off the soft tissues of the throat).
- Place one hand on the person's forehead and tilt the head back gently.

Breathing

- Look, listen and feel to determine if the person is breathing normally. Take no more than *ten seconds* to do this. If the person is not breathing at all, not breathing normally, or you are unsure, then treat the person as being in cardiac arrest.

Ambulance

- Ask somebody to make the emergency call for you, otherwise make the call yourself. If you can, stay with the person.
- Some cordless and corded phones have a *speaker* button, so use this to enable you to perform CPR whilst talking with the ambulance service.
- If an AED is available, send somebody to get it. Start CPR if you are on your own – do not leave the person.

Circulation

- Perform high quality, uninterrupted CPR. The compression rate is 100 – 120 per minute, pressing down 5 – 6 cm on the lower half of the sternum.
- Make sure the chest rises fully between compressions, but maintain contact with the chest.
- Allow an equal amount of time for compression and release.
- Give 30 compressions then two rescue breaths, taking no more than *ten seconds* to deliver the two breaths. The breaths should not be forceful or rapid, should take one second each to deliver, and be sufficient to make the chest rise as in a normal breath.
- Only make two attempts to achieve two rescue breaths – if either or both breaths do not result in lung inflation, then return immediately to chest compressions.
- Continue with chest compressions and rescue breaths in a ratio of 30:2.
- CPR is hard work and physically demanding. Be aware that your compression rate and compression depth will reduce with fatigue, so it is important to swap rescuers to maintain CPR quality. This emphasises the importance of a co-ordinated team approach.

2. Basic Life Support – CHILDREN & INFANTS

Children are treated the same as adults except:

- You may only need the heel of one hand to compress the chest.
- You compress the chest at least one-third of its depth.

Infants are treated the same as adults except:

- You use two fingers to compress the chest.
- You compress the chest at least one-third.
- Do not hyperextend the neck.
- Seal your mouth over the infant's mouth and nose.

With children and infants:

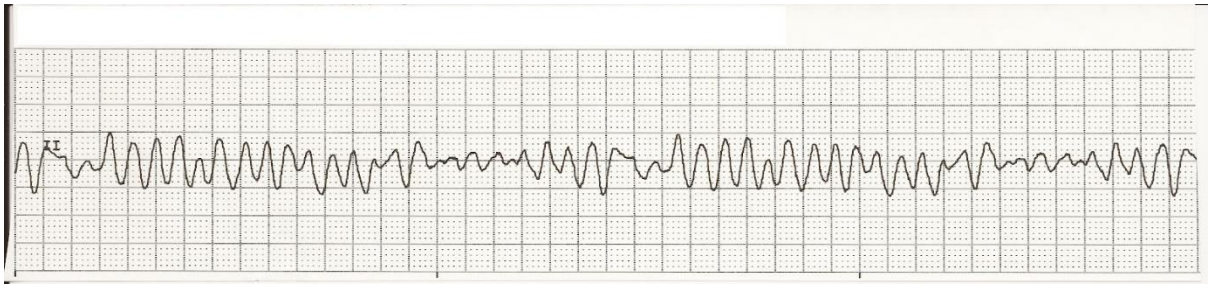
- Start resuscitation with five rescue breaths.
- Locate the xiphisternum and compress the sternum one finger's breadth above this.
- If you must leave the child or infant to make the 999/112 call, perform CPR for one-minute first.
- If you are confident and competent in your resuscitation skills, use a ratio of 15 compressions to 2 rescue breaths.
- The encircling technique can be used if there are at least two rescuers.

"The only exception to performing 1 min of CPR before going for help is in the unlikely event of a child with a witnessed, sudden collapse when the rescuer is alone and primary cardiac arrest is suspected. In this situation, a shockable rhythm is likely, and the child may need defibrillation. Seek help immediately if there is no one to go for you."

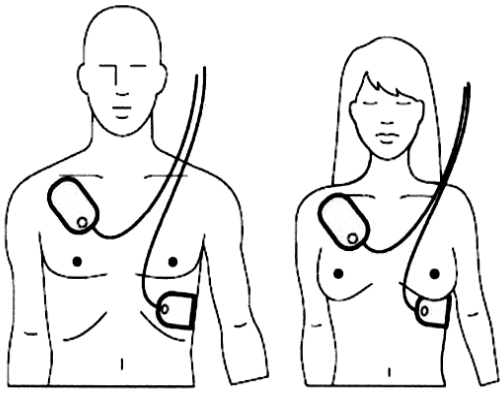
https://www.resus.org.uk/resuscitation-guidelines/paediatric-basic-life-support/

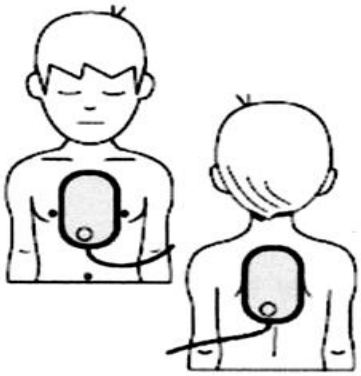
3. Defibrillation using an AED

Survival rates are as high as 70% when defibrillation pads are applied within three minutes of collapse. If a cardiac arrest victim is in ventricular fibrillation, then the victim needs a defibrillator – there is no substitute. Follow the voice / visual prompts, and do not interrupt chest compressions when placing the pads.



Do not use an AED (automated external defibrillator) on an infant less than one year.





Do not interrupt CPR unless you think the person has come back to life. In which case, stop CPR, perform a quick 'shout' and 'shake' and reassess the person's breathing. If there is any doubt as to whether the person is breathing, or breathing normally, continue CPR.

Useful adjuncts that should be with every AED are shears (to cut clothing), surgical prep razor (to shave the upper right chest if needed) and a cloth (to wipe the chest).

Think about the six Ps:

- Perspiration – ensure the chest is dry and free from any creams etc.
- Pacemaker – place the pad at least 10cm from the device.
- Pendants – there should not be any metal between or underneath the pads.
- Piercings – there is nothing you can do about these.
- Patches/Plasters – remove as a precaution – do not cover with a defibrillation pad.
- Playtex – when removing clothes, cut through a bra also.

Keep oxygen equipment at least one metre from the person's chest during defibrillation.

4. Recovery position

The position is such that the airway is *safer* (thus better protected) than when the casualty is supine. An unresponsive casualty who is breathing normally can be placed in the recovery position. The Recovery Position allows the tongue and epiglottis to move forward, and enables blood, vomit, or other secretions to drain away.

Children can be placed in the same position as adults, and a pregnant woman should be placed onto her left side if possible.

Method

- Remove the person's glasses.
- Kneel by the hips and ensure both legs are straight.
- Place the arm nearest you away from the body with the palm facing up.
- Interlock your fingers with the person's other hand.
- Bring the hand across the chest to rest against the cheek nearest to you.
- Lift under the knee of the far leg so that the sole of the foot is on the ground.
- Pull on the far leg to roll the person towards you.
- Tilt the head back and open the mouth to help maintain the airway.
- Adjust the upper leg so the hip and knee are at right angles.
- Constantly check the person is breathing normally.
- After thirty minutes, turn the person onto the opposite side.