# PROCEDURE FOR BASIC LIFE SUPPORT - ADULT

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<tr>
<th>Issue History</th>
<th>Issue Version</th>
<th>Purpose of Issue/Description of Change</th>
<th>Planned Review Date</th>
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<td>1</td>
<td>To inform staff of the fundamental principles of basic life support for adults</td>
<td>June 2015</td>
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<th>Named Responsible Officer:-</th>
<th>Approved by</th>
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<tr>
<td>Resuscitation Officer</td>
<td>Quality, Patient Experience and Risk Group</td>
<td>June 2012</td>
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<th>Section:- CP13</th>
<th>Target Audience</th>
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<td>Multidisciplinary</td>
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UNLESS THIS VERSION HAS BEEN TAKEN DIRECTLY FROM TRUST WEB SITE THERE IS NO ASSURANCE THIS IS THE CORRECT VERSION
CONTROL RECORD

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<th>Title</th>
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<td>Purpose</td>
<td>To provide staff on the fundamental principles of basic life support for adults</td>
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<tr>
<td>Author</td>
<td>Quality and Governance Service (QGS)</td>
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<tr>
<td>Equality Assessment</td>
<td>Integrated into procedure</td>
</tr>
<tr>
<td>Subject Experts</td>
<td>Caroline Hewitt, Tom Meade and Resuscitation Committee</td>
</tr>
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<td>Document Librarian</td>
<td>QGS</td>
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<td>Groups consulted with :</td>
<td>Clinical Policies and Procedures Group</td>
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<tr>
<td>Infection Control Approved</td>
<td>N/A</td>
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<td>Date formally approved by</td>
<td>June 2012</td>
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<td>Risk and Governance Group</td>
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<tr>
<td>Method of distribution</td>
<td>Email ✓</td>
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<tr>
<td>Archived</td>
<td>Date 25th June 2012</td>
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<td>Access</td>
<td>Via QGS</td>
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VERSION CONTROL RECORD

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<td>Version 1</td>
<td>Resuscitation Officer</td>
<td>N</td>
<td>Revised procedure in new Trust format.</td>
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INTRODUCTION

Basic Life Support (BLS) comprises the elements: initial assessment, then airway maintenance, chest compressions and expired air ventilation (rescue breathing). BLS implies that no equipment is employed; where a simple airway or facemask for mouth to mouth ventilation is used, this is defined as ‘basic life support with airway adjunct’.

The purpose of BLS is to maintain adequate ventilation and circulation until means can be obtained to reverse the underlying cause of the arrest. It is, therefore, a ‘holding operation’, although on occasions, particularly when the primary pathology is respiratory failure, it may itself reverse the cause and allow full recovery. Failure of the circulation for three to four minutes (less if the casualty is initially hypoxaemic) will lead to irreversible cerebral damage. Delay, even within that time, will lessen the eventual chances of a successful outcome. Emphasis must, therefore, be placed on rapid institution of basic life support by a rescuer who nonetheless should follow the recommended sequence of action.

Once cardiopulmonary resuscitation (CPR) has started, it is now recommended that the rescuer should only stop CPR if the patient shows signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully, as well as breathing normally.

TARGET GROUP

The procedures applies to Trust staff who may be present at the scene of a cardiac arrest, who require the appropriate resuscitation skills and are able to put them into practice.

TRAINING

All staff in the Trust are required to comply with mandatory training as specified in the Trust’s Mandatory Training Matrix. Clinical Staff are also required to comply with service specific mandatory training as specified within their service training matrix.

RELATED POLICIES

Please refer to relevant Trust policies and procedures

SCOPE OF PROCEDURE

This procedure only outlines basic life support which is applicable to services Trust wide. There are additional specific service procedures that require some clinical staff to provide ‘intermediate life support’ for specific clinical treatments for patients in their care e.g. Sexual Health, Dental Services and Heart Support.
**PROCEDURE**

Check you are aware of the telephone systems in the clinical areas you work from as some phones require a pre-dial of 9

<table>
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<th>ACTION</th>
<th>RATIONALE</th>
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<td>Ensure it is safe to approach for all persons involved.</td>
<td>To maintain the safety of all persons involved in the situation.</td>
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| If the patient responds:  
  - Leave them in the position which you found them provided there has been an assessment that no further danger is apparent  
  - Try to find out what is wrong with the patient and get help if required  
  - Reassess the patient regularly. | To prevent further damage from occurring (e.g. if the patient has a spinal injury), and to assess the level of harm to the patient so the right actions are taken accordingly. |
| If the patient does not respond:  
  - Shout for help | Summon help to ensure emergency services arrive as soon as possible. |
| Turn the patient onto their back and then open the airway using head tilt and chin lift:  
  - Place a hand on the patient’s forehead and gently tilt their head back  
  - Using your fingertips under the point of the patient’s chin, lift the chin to open the airway. | Ensures the airway is open as the process allows the tongue to be lifted from the back of the throat. Airway management is a primary consideration in the CPR process and ensures lungs are safe from aspiration. |
| Keeping the airway open, look, listen and feel for normal breathing.  
  - Look for chest movement  
  - Listen at the patient’s mouth for breath sounds  
  - Feel for air on your cheek. | To ascertain whether the patient has an open airway. To gauge whether the patient is displaying a normal breathing pattern. |
| In the first few minutes after cardiac arrest, the patient may barely be breathing, or taking infrequent, noisy, gasps. This is often termed agonal breathing and must NOT be confused with normal breathing. Look, listen and feel for NO MORE then 10 seconds to determine if the patient is breathing normally. If there is any doubt as to whether breathing is normal, act as if it is NOT normal. | Placing a patient in the recovery position gives gravity assistance to the clearance of physical obstruction of the airway by the tongue, and also gives a clear route by which fluid can drain from the airway. |
| If the patient IS breathing normally:  
  - Turn them into the recovery position  
  - Summon help from the ambulance service by mobile phone. If this is not possible use a bystander. Leave the patient only if there is no other way of obtaining help.  
  - Continue to assess that breathing remains | |
If there is any doubt about the presence of normal breathing, start CPR.

<table>
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<th>If the patient is NOT breathing normally:</th>
<th>Summon help to ensure emergency services arrive as soon as possible.</th>
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<tr>
<td>• Ask someone to call for an ambulance and bring an automated external defibrillator (AED) if available.</td>
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<td>• If working alone, use a mobile phone to call for an ambulance.</td>
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<td>• Leave the patient when no other option exists for getting help.</td>
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Start chest compressions as follows:

| To ensure adequate oxygenation of vital organs.                                |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------|
| • Kneel by the side of the patient                                             |                                                                       |
| • Place the heel of one hand in the centre of the patient’s chest (which is the lower half of the victim’s sternum – breastbone) |                                                                       |
| • Place the heel of your other hand on top of the first hand                  |                                                                       |
| • Interlock the fingers of your hands and ensure that pressure is not applied over the patient’s ribs. Do not apply any pressure over the upper abdomen or the bottom end of the sternum |                                                                       |
| • Position yourself vertically above the patient’s chest and, with your arms straight, press down on the sternum at a depth of 5 – 6cm. |                                                                       |
| • After each compression, release all the pressure on the chest without losing contact between your hands and the sternum. Repeat at a rate of 100 – 120 per minute. |                                                                       |
| • Compression and release should take an equal amount of time.                |                                                                       |

Combine chest compressions with rescue breaths:

| To ensure adequate oxygenation of vital organs.                                |
|--------------------------------------------------------------------------------|----------------------------------------------------------------------|
| • After 30 compressions open the airway again using head tilt and chin lift   |                                                                       |
| • Pinch the soft part of the patient’s nose closed, using the index finger and thumb of your hand on their forehead. |                                                                       |
| • Allow their mouth to open, but maintain chin lift                          |                                                                       |
| • Take a normal breath and place your lips around their mouth, making sure that you have a good seal. |                                                                       |
| • Blow steadily into their mouth whilst watching for their chest to rise; take about one second to make their chest rise as in normal breathing; this is an effective rescue breath. |                                                                       |
| • Maintaining head tilt and chin lift, take your                            |                                                                       |
mouth away from the patient and watch for their chest to fall as air is expelled.

- Take another normal breath and blow into the patient’s mouth once more to give a total of two effective rescue breaths. The two breaths should not take more than 5 seconds. Then return your hands without delay to the correct position on the sternum and give a further 30 chest compressions.
- Continue with chest compressions and rescue breaths in a ratio of 30:2.
- Stop to recheck the victim only if they start to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully AND starts to breathe normally; otherwise do not interrupt resuscitation.

If the initial rescue breath of each sequence does not make the chest rise as in normal breathing, then, before your next attempt:
- Check the patient’s mouth and remove any visible obstruction
- Recheck that there is adequate head tilt and chin lift
- Do not attempt more than two breaths each time before returning to chest compressions.

| If more than one rescuer is present, the process of CPR should be shared at a rate of approximately 1-2 minutes. | To facilitate effective resuscitation and avoid rescuer tiredness. |
| Ensure the minimum of delay during the changeover of rescuers, and do not interrupt chest compressions. | To maintain consistency of the CPR process. |
| Continue resuscitation until: | To ensure adequate oxygenation of vital organs and airway patency. |
| - Qualified help arrives and takes over | |
| - The patient starts to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully AND starts to breathe normally, OR you become exhausted | |

**Chest compression**

In most circumstances it will be possible to identify the correct hand position for chest compression without removing the victim’s clothes. If in any doubt, remove outer clothing. Each time compressions are resumed on an adult, the rescuer should place their hands on the lower half of the sternum. It is recommended that this location be taught in a simple way, such as ‘place the heel of your hand in the centre of the chest with the other hand on top.’
This teaching should be accompanied by a demonstration of placing the hands on the lower half of the sternum. Use of the inter nipple line as a landmark for hand placement is not reliable.

**Summary of performing chest compression:**

- Compress the chest at a rate of 100-120 per minute.
- Each time compressions are resumed, place your hands without delay ‘in the centre of the chest.
- Pay attention to achieving the full compression depth of 5-6 cm (for an adult).
- Allow the chest to recoil completely after each compression.
- Take approximately the same amount of time for compression and relaxation.
- Minimise interruptions in chest compression.
- ‘Compression rate’ refers to the speed at which compressions are given, not the total number delivered in each minute. The number delivered is determined not only by the rate, but also by the number of interruptions to open the airway, deliver rescue breaths, and allow AED analysis.

**Compression-only CPR**

- If you are unable to give rescue breaths due to clinical risks, give chest compressions only. Record the clinical risks that were present to provide a rational of why rescue breaths were not given.

- If chest compressions only are given, these should be continuous at a rate of 100 – 120 per minute.

- Stop to recheck the patient only if they start to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully AND starts to breath normally; otherwise **do not interrupt resuscitation**.

Compression-only CPR has potential advantages over chest compression and ventilation, particularly when the rescuer is an untrained or partially-trained layperson. However, there are situations where combining chest compressions with ventilation is better, for example in children, asphyxial arrests, and prolonged arrests. Therefore CPR should remain standard care for Trust staff and the preferred target for laypeople, the emphasis always being on minimal interruption in compressions.

**FURTHER POINTS RELATED TO BASIC LIFE SUPPORT**

**Risks to the rescuer and victim**
The safety of both the rescuer and patient are paramount during a resuscitation attempt. Trust staff should take appropriate safety precautions where feasible, especially if the patient is known to have a serious infection such as tuberculosis or severe acute respiratory syndrome. During an outbreak of a highly infectious condition (such as SARS), full protective precautions for the rescuer are essential.
Initial rescue breaths
During the first few minutes after non-asphyxial cardiac arrest the blood oxygen content remains high. Therefore, ventilation is less important than chest compression at this time. It is well recognised that skill acquisition and retention are aided by simplification of the BLS sequence of actions. It is also recognised that rescuers are frequently unwilling to carry out mouth-to-mouth ventilation for a variety of reasons, including fear of infection and distaste for the procedure. For these reasons, and to emphasise the priority of chest compressions, it is recommended that, in adults, CPR should start with chest compressions rather than initial ventilations.

Jaw thrust
The jaw thrust technique is not recommended for lay rescuers because it is difficult to learn and perform. Therefore, the lay rescuer should open the airway using a head tilt and chin lift manoeuvre for both injured and non-injured victims.

Agonal gasps
Agonal gasps are present in up to 40% of cardiac arrest patients. Therefore laypeople should be taught to begin CPR if the patient is unconscious (unresponsive) and not breathing normally. It should be emphasised during training that agonal gasps occur commonly in the first few minutes after sudden cardiac arrest; they are an indication for starting CPR immediately and should not be confused with normal breathing.

Mouth-to-nose ventilation
Mouth-to-nose ventilation is an effective alternative to mouth-to-mouth ventilation. It may be considered if the patient’s mouth is seriously injured or cannot be opened, if the rescuer is assisting a person in the water, or if a mouth-to-mouth seal is difficult to achieve.

Mouth-to-tracheostomy ventilation
Mouth-to-tracheostomy ventilation may be used for a victim with a tracheostomy tube or tracheal stoma who requires rescue breathing.

Bag-mask ventilation
Considerable practice and skill are required to use a bag and mask for ventilation. The lone rescuer has to be able to open the airway with a jaw thrust whilst simultaneously holding the mask to the victim’s face. It is a technique that is appropriate only for lay rescuers who work in highly specialised areas, such as where there is a risk of cyanide poisoning or exposure to other toxic agents. There are other specific circumstances in which non-healthcare providers receive extended training in first aid, which could include training, and retraining, in the use of bag-mask ventilation. The same strict training that applies to healthcare professionals should be followed and the two-person technique is preferable.

Regurgitation during CPR
Regurgitation of stomach contents is common during CPR, particularly in victims of drowning.

If regurgitation occurs:

- Turn the patient away from you.
• Keep them on their side and prevent them from toppling on to their front.
• Ensure that their head is turned towards the floor and their mouth is open and at the lowest point, thus allowing vomit to drain away.
• Clear any residual debris from their mouth with your fingers; and immediately turn them on to their back, re-establish an airway, and continue rescue breathing and chest compressions at the recommended rate.

Over-the-head CPR
Over-the-head CPR for a single rescuer and straddle CPR for two rescuers may be considered for resuscitation in confined spaces.

Recovery Position
There are several variations of the recovery position, each with its own advantages. No single position is perfect for all victims. The position should be stable, near a true lateral position with the head dependent, and with no pressure on the chest to impair breathing.

The Resuscitation Council (UK) (2010) recommends the following sequence of actions to place a patient in the recovery position:

• Remove the patient’s glasses, if present.
• Kneel beside the patient and make sure that both their legs are straight.
• Place the arm nearest to you out at right angles to their body, elbow bent with the hand palm-up.
• Bring the far arm across the chest, and hold the back of the hand against the patient’s cheek nearest to you.
• With your other hand, grasp the far leg just above the knee and pull it up, keeping the foot on the ground.
• Keeping their hand pressed against their cheek, pull on the far leg to roll the patient towards you on to their side.
• Adjust the upper leg so that both the hip and knee are bent at right angles.
• Tilt the head back to make sure that the airway remains open.
• If necessary, adjust the hand under the cheek to keep the head tilted and facing downwards to allow liquid material to drain from the mouth.
• Check breathing regularly.
• If the patient has to be kept in the recovery position for more than 30 min turn them to the opposite side to relieve the pressure on the lower arm.

Choking

Recognition of choking (airway obstruction by a foreign body) is the key to successful outcomes, it is important not to confuse this emergency with fainting, heart attack, seizure, or other conditions that may cause sudden respiratory distress, cyanosis, or loss of consciousness.

Foreign bodies may cause either mild or severe airway obstruction. The signs and symptoms enabling differentiation between mild and severe airway obstruction are summarised in the table below. It is important to ask the conscious patient ‘Are you choking?’
Sequence for the Treatment of Adult Choking
(This sequence is also suitable for use in children over the age of 1 year)

1. **If the victim shows signs of mild airway obstruction:**
   - Encourage them to continue coughing, but do nothing else.

2. **If the victim shows signs of severe airway obstruction and is conscious:**
   - Give up to five back blows.
     - Stand to the side and slightly behind the person.
     - Support the chest with one hand and lean the person well forwards so that when the obstructing object is dislodged it comes out of the mouth rather than goes further down the airway.
     - Give up to five sharp blows between the shoulder blades with the heel of your other hand.
   - Check to see if each back blow has relieved the airway obstruction. The aim is to relieve the obstruction with each blow rather than necessarily to give all five.
   - If five back blows fail to relieve the airway obstruction give up to five abdominal thrusts.
     - Stand behind the victim and put both arms round the upper part of their abdomen.
     - Lean the person forwards.
     - Clench your fist and place it between the umbilicus and the bottom end of the sternum.
     - Grasp this hand with your other hand and pull sharply inwards and upwards.
     - Repeat up to five times.

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**General signs of choking**
- Attack occurs while eating
- Patient may clutch their neck

**Signs of severe airway obstruction**

*Response to question ‘Are you choking?’*
- Patient unable to speak
- Patient may respond by nodding

*Other signs*
- Patient unable to breathe
- Breathing sounds wheezy
- Attempts at coughing are silent
- Patient may be unconscious

**Signs of mild airway obstruction**

*Response to question ‘Are you choking?’*
- Patient speaks and answers yes

*Other signs*
- Patient is unable to speak, cough and breathe
• If the obstruction is still not relieved, continue alternating five back blows with five abdominal thrusts.

3. **If the person becomes unconscious:**

• Support the person carefully to the ground.
• Call an ambulance immediately.
• Begin CPR. Healthcare providers, trained and experienced in feeling for a carotid pulse, should initiate chest compressions even if a pulse is present in the unconscious choking person.

Following successful treatment for choking, foreign material may nevertheless remain in the upper or lower respiratory tract and cause complications later. Patients with a persistent cough, difficulty swallowing, or with the sensation of an object being still stuck in the throat should therefore be referred for an immediate medical opinion.

See Appendix 2 for Adult Choking Treatment Algorithm.

**EQUIPMENT**

AEDs are self-calibrating machines. However, nominated Trust staff must routinely check the expiry dates of the AED pads and battery weekly, and document the findings in the AED log book appropriately. It must be evidenced within the log book the date and time of the check. In addition, the name, signature, and designation of the staff member must also be evident. The service must have a system for monitoring compliance with this standard at least twice a year. This will be reviewed at the Division Governance Group.

**WERE TO GET ADVICE FROM**

When further advice or guidance is required, Trust staff should contact their Line Manager. The Trust Resuscitation Officer must also be contacted when more complex, comprehensive advice is required.

**INCIDENT REPORTING**

Clinical incidents or near misses must be reported using the Trusts Incident Reporting system.

**SAFEGUARDING**

In any situation where staff may consider the patient to be a vulnerable adult, they need to follow the Trust Safeguarding Adult Policy and discuss with their line manager and document outcomes.

**REFERRALS**

Any referrals to health professionals, therapists or other specialist services must be followed up and all professional advice or guidance documented in the patients health records.
EQUALITY ASSESSMENT

During the development of this procedure the Trust has considered the clinical needs of each protected characteristic (age, disability, gender, gender reassignment, pregnancy and maternity, race, religion or belief, sexual orientation). There is no evidence of exclusion of these named groups.

If staff become aware of any clinical exclusions that impact on the delivery of care a Trust Incident form would need to be completed using the Trust’s incident reporting system and an appropriate action plan put in place.

REFERENCES

Adult Basic Life Support

**UNRESPONSIVE?**

- Shout for help

**Open airway**

**NOT BREATHING NORMALLY?**

- Call 999

- 30 chest compressions

- 2 rescue breaths
  - 30 chest compressions
Adult Choking Treatment Algorithm

Assess severity

Severe
airway obstruction
(ineffective cough)

Unconscious
Start CPR

Conscious
5 back blows
5 abdominal thrusts

Mild
Airway obstruction
(effective cough)

Encourage cough
Continue to check for deterioration to ineffective cough or until obstruction relieved.