First Responder

2nd Edition 2007

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Dolphin Books

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Second edition
Published by and © 2007
Dolphin Books
Ulting, Essex, CM9 6QY
Telephone: 01245 380300

E-mail: books@dolphins.co.uk

ISBN 0 9520339 9 2

British Library cataloguing-in-publication data.
A catalogue record for this book is available from the British Library.

This book is based on the 2005 Resuscitation Guidelines produced by the Resuscitation Council (UK) and their permission for using the Guidelines is gratefully acknowledged.

Contents

Section One

About First Responders

When a life is at stake...

.....every minute counts

The clock is ticking

Ambulance Services are required to attend 75% of serious incidents within 8 minutes of the call for help.

It is well known that if a person stops breathing or their heart stops beating, brain damage will occur within 3-4 minutes. This is not in 75% of cases, but in all cases.

This can leave a gap of up to 4-5 minutes in 75% of cases and perhaps longer in the remaining 25% of cases, particularly in rural areas, where travel times are longer.

However, if somebody with the right training and skills can be there sooner, the brain-damage clock can be temporarily stopped.

brain damage begins within 3-4 minutes

You can stop that clock

First Responders "buy time" for the patient until the ambulance or other skilled medical help arrives. They do this by clearing the airway, giving rescue breaths and compressing the chest to pump blood around the body. These things together are known as cardio-pulmonary resuscitation, or CPR. In addition, members of First Responder schemes also use a defibrillator to provide the only effective treatment for cardiac arrest due to ventricular fibrillation (see page 50). Early CPR and early defibrillation are links 2 and 3 in the Chain of Survival (see next page). All these things ensure the delivery of vital oxygen to the brain, which will improve the chances of recovery.

As a First Responder, you will often be called upon to deal with more than just a cardiac arrest. First Responders can also make a big difference in cases of chest pain, choking, severe bleeding and any unconscious patient.

Being a First Responder can be demanding, but you can reap big rewards of satisfaction by helping...

...when a life is at stake

The Chain of Survival 4 linked events

A successful outcome to cardiac arrest depends on a chain of four linked

1. Early access to care

A 999 call must be made to the Ambulance Service as soon as possible. As soon as the address is given, an ambulance is dispatched, even while other questions are being asked. The quicker this happens, the quicker it will be there. First Responders are also dispatched immediately if the ambulance is likely to take more than 8 minutes to arrive.

First Responders often arrive within 2 or 3 minutes of the call and on average within 5 minutes.

2. Early CPR

The brain will start to die if deprived of oxygen for a few minutes. CPR (cardio-pulmonary resuscitation) stops the clock and allows the other events in the chain to have a chance of success.

First Responders are trained and skilled at CPR.

First Responders are part of the chain

3. Early defibrillation

A cardiac arrest is most often caused by ventricular fibrillation. The only effective treatment for fibrillation is defibrillation, which entails an electric shock from a defibrillator. This can only be carried out by a skilled person and ideally should be performed within 8 minutes of the cardiac arrest.

First Responders carry a semi-automatic defibrillator and are trained and skilled in its use.

4. Early access to Advanced Life Support

Advanced Life Support (ALS) can only be performed by medical personnel such as doctors, paramedics or nurses. It involves advanced airway control, ventilation of the patient, drugs, fluids, etc.

ALS can only be successful if all the links in the Chain of Survival are intact.

"the brain starts to die after 3 or 4 minutes without oxygen"

What training will First Responders receive?

Training will cover all procedures

At the end of the training course, a First Responder should be able to:

Describe

the concept of the First Responder
the importance of prompt, appropriate life-saving techniques;
the callout procedure of the Scheme;
the legal implications of responding as a volunteer in a private vehicle;
the scene management procedures of the Scheme;
the correct procedure for handing over and dealing with the consequences of an incident;
the correct procedure for operational communications with the Scheme;
the correct procedure for oxygen therapy

Demonstrate

the correct procedure for the management of an unconscious patient;
the correct procedure for the management of patients suffering chest pains;
the correct procedure for the management of cardiac arrest;
the correct procedure for the safe and appropriate use of a defibrillator;
the correct procedure for the management of choking patients;
the correct procedure for the management of severe bleeding;
the correct procedure for the management of trauma

What are First Responders expected to do?

to attend incidents promptly, and act professionally and courteously;
to have regard for the religious & cultural beliefs of patients and relatives;
to carry out procedures in an appropriate manner;
to act as a part of a team in the interests of patient care;
to keep current with training and attend updates and refreshers as required by their scheme;
to ask for additional training and support as needed.

What are First Responders not expected to do?

to attend incidents that are known or believed to be dangerous;
to put themselves at risk after assessing the scene;
to act beyond the procedures of the scheme;
to perform outside their physical limits;
to be heroes.

What qualities do First Responders need?

First Responders come from all walks of life

A First Responder needs to be quick-thinking

As the first trained help on scene, you need to be able to assess a situation and decide on priorities very quickly. The people involved in the incident are often unable to think clearly, so you need to be able to organise the scene to the benefit of the patient, such as making sure the dog is put in another room, asking the relatives about the medical history, deciding if the police need to be informed, thinking about any children present and keeping the scene safe.

A First Responder needs to be reasonably fit

You will not be required to run long distances, climb mountains or carry patients downstairs, as you will be sent to patients to deal with immediate needs and wait for the ambulance crew to take over. You will, however be expected to carry out CPR for some time, possibly 10 - 20 minutes, which is very tiring, physically and mentally. When the ambulance crew arrive, you may be asked to assist by carrying on CPR whilst other treatments are given. This may involve you on scene for 20-30 minutes.

A First Responder needs to be able to work as part of a team

You will normally be part of a First Responder team, working within a rota for availability. Keeping to that rota ensures emergency cover for the community at all times. You will also be part of the Ambulance Service and must be able to work as a team member, under instruction from Ambulance Control and the ambulance crew.

A First Responder needs to be able to stay calm in a crisis

The scene of an emergency can be very chaotic, just when you need calm and order. The First Responder needs to be seen to be calm and professional throughout the incident, not being detached, but showing empathy without becoming emotionally involved.

A First Responder needs to be able to absorb training and be able to remember and follow procedures under pressure

The equipment carried by a First Responder includes a semi-automatic defibrillator. Although this is relatively simple and easy to operate in the training room, absolute confidence in operation under the stressful conditions of an incident are vital. Although the types of incident that First Responders are sent to are normally limited to unconsciousness, chest pains, cardiac arrest, choking and trauma, the scene may reveal problems which complicate matters. Keeping to laid-down procedures is vital, as a wrong diagnosis or treatment can have serious consequences.

Safety & personal protection

Personal protection should be worn for every call

AIDS, & other infections

There are no documented cases of First Responders becoming infected with HIV or AIDS as a result of giving First Aid. However, human body fluids, such as blood, urine and vomit, are extremely unpleasant and potentially dangerous as they carry many types of bacteria and viruses which may cause infection.

When dealing with a patient, always wear surgical gloves (a non-latex type, as many people are allergic to latex) which will be issued by your scheme. When doing rescue breathing, always use a bag and mask or pocket-mask. Take care with fluid spills of any kind and do not kneel down in wet areas. Avoid scratching your nose with your gloved hand and always wash your hands and clean your equipment after an incident.

Legal questions

As a trained person, if you go to help a patient, you owe them a legal "duty of care". This care must be to the standard expected from a person with similar training, no more, no less. If you carry out care to the standard to which you have been trained, using the methods you have been trained to use, you cannot successfully be sued for negligence.

This duty of care also means that you must maintain and update your training in accordance with the schedule laid down by the organisation that trained you.

Scene safety

First Responders should not be sent to any incidents that are clearly dangerous, such as fires, explosions, road traffic accidents, pub fights and the like.

However, seemingly safe situations may have hidden dangers that caused the person to become a patient in the first place. These dangers could cause you to become a patient too. Problems can range from a faulty electrical appliance to a large and aggressive dog or a violent person.

Before entering an incident, always check that it is safe to do so. If you think it is not safe, either make it safe (if possible and without exposing yourself to risk, such as asking for dogs to be put in another room) or do not enter. When the ambulance arrives, it will not help the situation to have two patients to deal with. If you cannot gain access to the premises, ask Control to contact the Police to attend - do not break in.

Section Two

Incident Procedures

Taking the call

The most important information is the location of the incident

The concept of a First Responder Scheme is that Ambulance Control will identify incidents in the Responders community or area that may be life-threatening, but which they cannot respond to with an ambulance within 8 minutes. The First Responder attends as a representative of the Ambulance Service and provides Basic Life Support and defibrillation, or emergency aid as necessary until the ambulance arrives.

The exact details of how a First Responder is activated to an incident will vary from Scheme to Scheme. Most schemes will use a mobile phone for communications.

Other schemes, such as those in private factories, railway stations and shopping precincts, have the same concept, but are not necessarily under the control of the Ambulance Service. In large premises, a personal radio may be used instead of the mobile phone.

Whichever type the scheme is, the First Responder must be immediately available at agreed times to respond to the call for assistance. These times will normally be within a team rota. Taking ten minutes to finish what you are doing is not acceptable. Being mobile within one minute of the call is the normal standard. If you are working in premises, your supervisor must be made aware that you must be immediately available.

Whichever the type of callout, the First Responder will receive details of the location of the call and what is believed to be happening. It is very important to read back the location to avoid mistakes.

Other information may be passed at the time of the call, such as the time and the Ambulance Control incident number. Whatever information is passed should be written down at the time, do not rely on your memory. It may be advantageous to have a special message pad by the phone or radio which will remind you of the information that is required. A sample form is in Section 5.

If responding in a private car, remember that you have no exemptions from any road traffic regulations. You are not permitted to speed or cross red traffic lights, no matter how urgent the journey. Remember that you will need to inform your insurance company of the new use of the vehicle.

"the most important part of the call is the location"

Handling an incident

No training manual could ever detail how to handle every incident that you will attend. Every incident is different and will need to be handled differently, but there are enough similarities between incidents to make general guidelines useful.

Being calm, methodical and professional will give the patient and their relatives confidence in you, which will make your job easier and add to your confidence, as well as making a contribution to the patients condition by calming the situation and reducing their stress.

On arrival, identify yourself and why you are there. Control should have told the caller that a First Responder is being sent, but after dialling 999 for an ambulance, people may be surprised and upset that you do not have an ambulance with you. Explain that an ambulance is on the way and that you are trained to carry out life-saving procedures in the meantime.

Take in an overall view of the scene, including where the patient is and their general demeanour. Also look for dangers to you or the patient. Look for clues to the patients conditions, such as drug bottles, oxygen supplies etc. (as described in Section 2 - Scene Assessment)

Identify the main problem (often referred to as the "Chief Complaint") as soon as possible. Often, especially in cases of very serious illness, it is clear from the start what is wrong, but the scene and patient must always be assessed in a logical manner to avoid missing vital information and clues. Take care with your questioning and be sympathetic, because patients and relatives are often highly stressed and may appear unhelpful and aggressive. However, with calm, logical questioning, the facts usually emerge and the situation is often calmed.

In most cases, make clear what you have found, what you intend to do about it and why. However, in the case of an immediately life-threatening emergency such as a cardiac arrest or choking, informed consent is not required but an explanation and some form of assent is sometimes available and good practice. Do not delay in providing life-saving treatment, as you can assume that calling for help is an acceptable form of consent in these cases.

Do not promise anything in the way of treatment or expected outcome. Each case and patient is different and treatments and outcome may be far from what you expect. Do not predict what will happen in hospital as a full examination and diagnosis by a doctor may reveal problems which are very different from your findings.

Keep reassuring the patient that help in the shape of an ambulance crew is on the way. Do not try to predict when the crew will arrive, as they may have to come some distance and your credibility in the eyes of the patient will reduce as the minutes pass after the predicted time.

Violence and aggression

Never answer aggression with aggression

First Responders should not be sent to an incident where there is known to be violence or aggression. However, the violence and aggression may not be detectable at the time of a 999 call or problems may develop in the time it takes you to respond. It may be that an unwelcome relative arrives, or a patient's condition worsens or even that the Police arrive in a situation involving illegal acts (previously unknown to the Ambulance Service), such as drug-taking or assault.

Some people are naturally aggressive, but stress will often make a normally placid person angry and aggressive, especially if they think that they are not going to receive the help that they think they need. Alcohol tends to add greatly to this aggression. It may be that somebody at the scene is being aggressive to somebody other than you and you are caught in the middle. Aggression can quickly turn to violence when the aggressor does not get what they want.

If you feel intimidated by the patient or their relatives, try to calm the situation by being calm and polite. Listen to what they have to say and try to answer their questions honestly. Do not make threatening movements or use threatening language or gestures, as this can often lead to violence towards you.

If they will not listen to you, or become more aggressive when you speak to them, tell them that you are going to leave if the aggression does not stop. Never threaten or use violence, except in clear self-defence, which can only take the form of reasonable force. The best and most reliable form of self-defence is escape, so if the aggression does not stop, leave immediately. If possible, take your equipment with you, but if necessary, leave it behind. The equipment is expendable, but you are not.

If you do need to escape, get away from the premises entirely and do not hang about outside, as the aggressor may follow you. Immediately contact your Control and advise them of the situation. The ambulance crew will then be warned and the Police will be called.

"stress will often make a normally placid person angry and aggressive"

Religion, customs and cultural beliefs

A training manual of this kind cannot adequately cover all aspects of religious or cultural beliefs in modern, multi-cultural Great Britain. There are dozens of religions and cultures and many of their customs and beliefs may seem strange to you.

It may be, for instance, that as a male First Responder, you will not be allowed to touch a female patient and some cultures will not allow a female to touch a male patient. Most people will waive this in an emergency, but it is wise to check first. Be especially careful about touching the patient in intimate places, as this causes the most offence, especially if done without warning.

Some people will show no apparent concern about their relatives, whilst some will show extreme concern. The First Responder is not in a position to judge the appropriateness of relatives reaction to an emergency and should not pass comment.

Most complaints to the Ambulance Service are concerned with the attitude of staff.

Patients and their relatives may hold their beliefs very dear and devoutly and they are fully entitled to them. Failing to keep to their customs may cause deep offence. You must not discriminate against anybody because of their race, culture, creed or way of life.

If the patient appears to be of a different culture to you, make sure first of all that they fully understand you. Make sure that you fully understand them. If they do not speak English, or speak it only poorly, try to find somebody that can translate. Try to identify any special needs that their culture imposes and, if possible and within the law, adhere to them. In the case of an emergency, many of these customs may be bypassed, but this can only be with the consent of the patient or their relatives.

"Most complaints to the Ambulance Service are concerned with the attitude of staff"

Recognition of death

Death cannot be certified by anyone except a doctor

It may be that when you arrive at the patients side, you find that they are unresponsive, not breathing and with no signs of circulation.

You must start patient assessment, Airway, Breathing and Circulation and the defibrillation procedures (see Key Skills) in all cases except in certain special circumstances.

This is because it may be that the patient appears to be lifeless because of hypothermia or a drug overdose or drowning, but primarily because a First Responder cannot legally confirm death. Death can be confirmed by a doctor or a paramedic, allowing either no resuscitation to begin or for efforts to cease.

Similarly, once you start resuscitation, you must continue until you are either unable to carry on because of exhaustion or you are relieved by somebody with higher qualifications than you. Note that when the defibrillator displays "no shock advised", this does not mean that the patient is dead, but indicates only that the heart rhythm found is not treatable by shocks.

The circumstances where you are not required to start resuscitation are as follows:

Where the patient is unresponsive, has no signs of life AND has rigor mortis, (where the body is stiff, cold and hard to the touch), with dark staining of the skin at the lowest points.

or

Where the patient is unresponsive, has no signs of life AND is obviously dead from severe injuries such as decapitation or incineration. (Resuscitation attempts in these circumstances would be completely futile as the body would be unable to sustain life, no matter what treatment is given).

or

Where you would be at personal risk if you attempt resuscitation.

The ambulance crew will confirm death or make other arrangements as necessary, which will sometimes involve the Police (acting as Coroners Officers) or the patients GP. You may be required to make a statement to the Police detailing what you found when you entered the scene, but you will receive help with this from either the crew or an Ambulance Officer.

You will not be responsible for providing counselling for the relatives.

Handing over and record-keeping

The information on the form is confidential

When the ambulance arrives, you should hand over to the crew with the information that you record on the patient report form. Obviously, if the patient is in cardiac arrest, this will be necessarily brief, but it is still important information that the crew can use to help make their assessment. If the patient is conscious, a more detailed report can be made.

The ambulance crew may well ask the First Responder to assist them, particularly if the patient is in cardiac arrest, but they may also need assistance in other ways, such as getting equipment or speaking to relatives. Remember that you may only do what you are trained to do unless you are under the direct instruction of somebody with higher training.

First Responder schemes will usually require that you keep a record of any incidents that you attend, whether or not you provide any treatment or the patient goes to hospital.

This record is usually in the form of a patient report form which is filled in after the incident and forwarded to the Scheme Coordinator. The form usually records the following information, which is important for record keeping, legal, audit and research purposes.

The information on this form is confidential and must never be discussed with or shown to unauthorised people.

- The name and call sign of the First Responder.
- The patient details, such as name, address and date of birth. If the date of birth is unknown, their age should be estimated.
- The incident details, with information on where and when the incident occurred. A very brief history of the incident is useful here.
- The response details. This will show when the call was made, when you were activated and when you arrived at the incident.
- Examination results. The AVPU assessment, the ABC assessment.
- Pain score.
- Details of any treatment that you gave.
- The condition of the patient on arrival of the ambulance.
- Any additional information that you feel may be useful.

You may wish to keep a record for yourself of the incidents that you attend, both for personal records and to help with later training. This is perfectly acceptable, provided the information is anonymous, with no name, address or other details that could identify the patient.

When the incident is over

You are positively encouraged to talk about incidents with your FR Group

Once you have completed your part in the incident, you should wash your hands and make sure your equipment is clean and ready for the next call. You should make yourself available to the First Responder scheme as soon as you are ready, which includes all the circumstances mentioned below.

After any incident, particularly one that is unpleasant, serious or tragic, you may require counselling for yourself. This may be referred to as Critical Incident Debriefing or Counselling. This is available via your First Responder scheme and can make an important contribution to your response to this and further incidents. You are positively encouraged to talk about incidents with your First Responder group and your local scheme contact. If the Scheme Coordinator is not available when needed, the Control Manager will always be available.

However, you must not discuss cases with the general public or the media, as all details of incidents are confidential. Any public announcements or comment must come only from the Ambulance Service through official channels. If you are approached for a comment, pass the enquiry on to Ambulance Headquarters during office hours, or Ambulance Control at other times.

It is important for the First Responder to understand that they may not see any good result from their treatment, despite their best efforts for the patient. Only a very few cardiac arrest patients recover at all, let alone recover on scene. Many other patients require extensive treatment in hospital. This does not mean that you are not doing any good by being a First Responder. You must recognise that you are part of a team providing emergency care for patients and you will not necessarily see the results of the whole team effort.

"You are positively encouraged to talk about incidents with your Group"

Section Three

Key Skills

The right skill at the right time

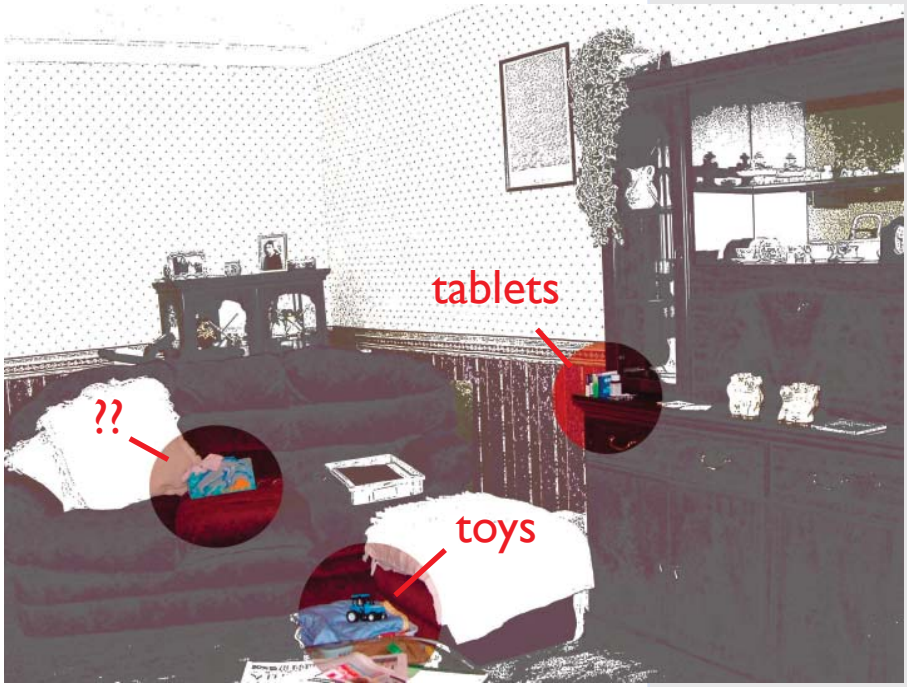
You must learn the skills so that you can apply them without indecision or delay

To be an effective First Responder, you will need certain key skills. When these have been learnt, handling an incident becomes much easier, being a matter of applying the right skills at the right time. No incident is routine, so you must learn the skills so that you can apply them without indecision or delay.

These skills are:

- Scene assessment
  Essential for safety and getting the overall picture
- Patient assessment
  Essential before any treatment can begin
- Checking ABC
  Without these, the patient will die
- Airway management
  Without a clear airway, all other treatment is futile
- Rescue breathing
  Can be breathing for the patient or assisting breathing
- Chest compressions
  These must be correct for any blood to circulate
- Oxygen Therapy
  Oxygen is required for most patients
- Pain scoring
  Helpful for the crew that takes the patient
- Semi-automatic defibrillation
  The only proven treatment for ventricular fibrillation
- Recovery position
  For maintaining a clear airway
- Dealing with trauma and severe bleeding
  The patient needs to be immobilised and the bleeding stopped
- Dealing with choking
  For maintaining a clear airway to allow a patient to breathe

Scene assessment



Always approach every incident with caution

Always approach every incident with caution, because your safety is paramount.

If at any time you recognise a hazard that you cannot deal with, such as a large dog, an aggressive person or even leaking gas, do not enter. If you can deal with the hazard by removing it or having it removed, do so immediately.

Ask for the dog to be put in another room, ask the bystanders to keep calm in the interests of the patient, ask for the television to be switched off and ask for the light to be switched on if the room is dark, but remember to ask politely.

Look around the room and get an overall impression of the circumstances. You may see clues to the patients condition, such as loose tablets, an oxygen bottle, a nebuliser or a stack of medicine bottles. These tend to indicate that a sick person lives in the house, (who is often the patient - but not always) but they may not belong to your patient, so ask whether they do belong to the patient.

Identify quickly which person is the patient. This is not always obvious, so always ask. After introducing yourself to the patient (if possible), ask them what is wrong, so that you can go on to make your patient assessment.

Do not make assumptions. If there is any doubt, ask questions.

"Always approach every scene with caution, because your safety depends on it"

Patient assessment

first determine whether they are responsive or unresponsive.

Response

Your first assessment on seeing the patient is to determine whether they are responsive or unresponsive. Begin to assess the patient as you approach them. If you see them talking and taking notice of their surroundings, they are responsive. If not, they may be unresponsive, but they may only be asleep or just have their eyes closed.

Assess their level of consciousness immediately, as unconscious patients are in danger from obstruction of the airway and a clear airway is vital to life. Unconscious patients may be not breathing with no circulation, so immediate recognition is vital.

AVPU

The level of consciousness is assessed using the AVPU scale.

A is for Alert

The patient is able to converse with you normally.

V is for Voice

The patient only responds to you if you speak to them. It is usual to say hello and ask if they are all right. If this brings an answer, the level is V. Don't forget that some patients are deaf and will only respond to a touch on the shoulder when they have their eyes closed. Once you have their attention, they can converse normally. Even if they are talking, they may be very confused or just making noises, which should be taken into account in your assessment. These patients have a slightly lowered level of consciousness.

P is for Pain

The patient will only respond to a painful stimulus, such as shaking the shoulder, or gently pinching the ear lobe. Be prepared for the patient to react suddenly to a painful stimulus. Do not apply a very painful stimulus, a gentle pinch or shake will suffice. These patients have a low level of consciousness and can be considered to be unconscious.

U is for Unresponsive

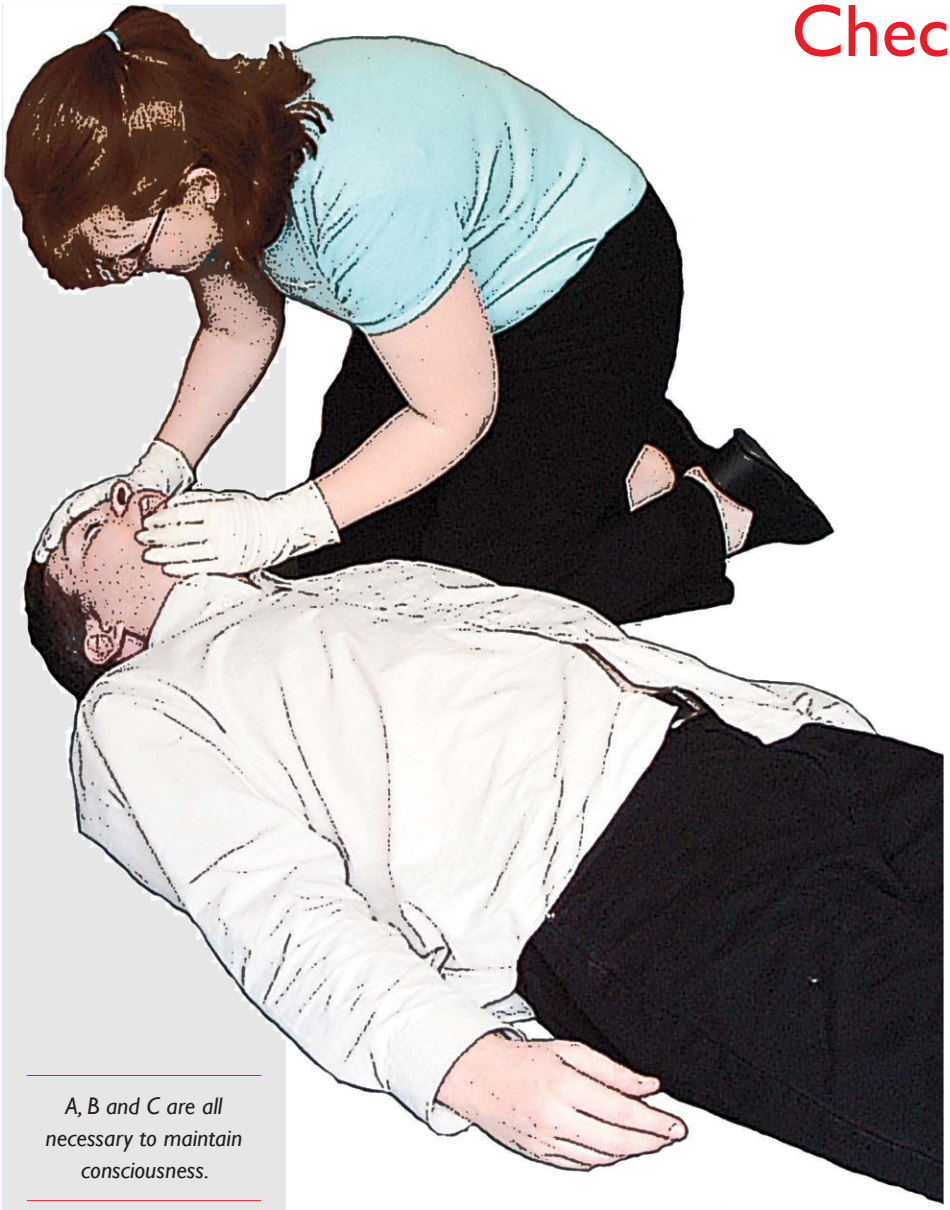
No matter what you do, the patient does not respond. These patients are unconscious.

Use the scale progressively, starting with your voice and then only moving on if there is no response.

If the patient is alert and fully conscious or if they are responsive to voice, once you are sure that they can maintain that consciousness and their own airway, you can begin to ask them about their problem and move on to any treatment as necessary.

If they only respond to pain or are unresponsive, they are unconscious and their airway is in danger. Immediately begin an ABC check.

Checking ABC



A, B and C are all necessary to maintain consciousness.

A = Airway

ABC - Airway, Breathing, Circulation, is part of a methodical assessment . If you see that they are talking, you know they have an airway, they are breathing and they have a pulse. A, B and C are all necessary to maintain consciousness.

Open their mouth and look to see if there is any obvious obstruction, such as loose teeth, food or vomit.

If false teeth are loose, remove them, otherwise leave them in place as it is easier to obtain a good seal for rescue breathing.

With your hand on the top of their head, apply gentle upward pressure with your fingers under the point of their chin. If you suspect from the history of the incident that there may be a neck or spinal injury, only tilt the head a small amount, sufficient to see inside the mouth and no more. Only a 5° tilt is required to open the airway and keep the tongue clear.

Do not probe too deeply

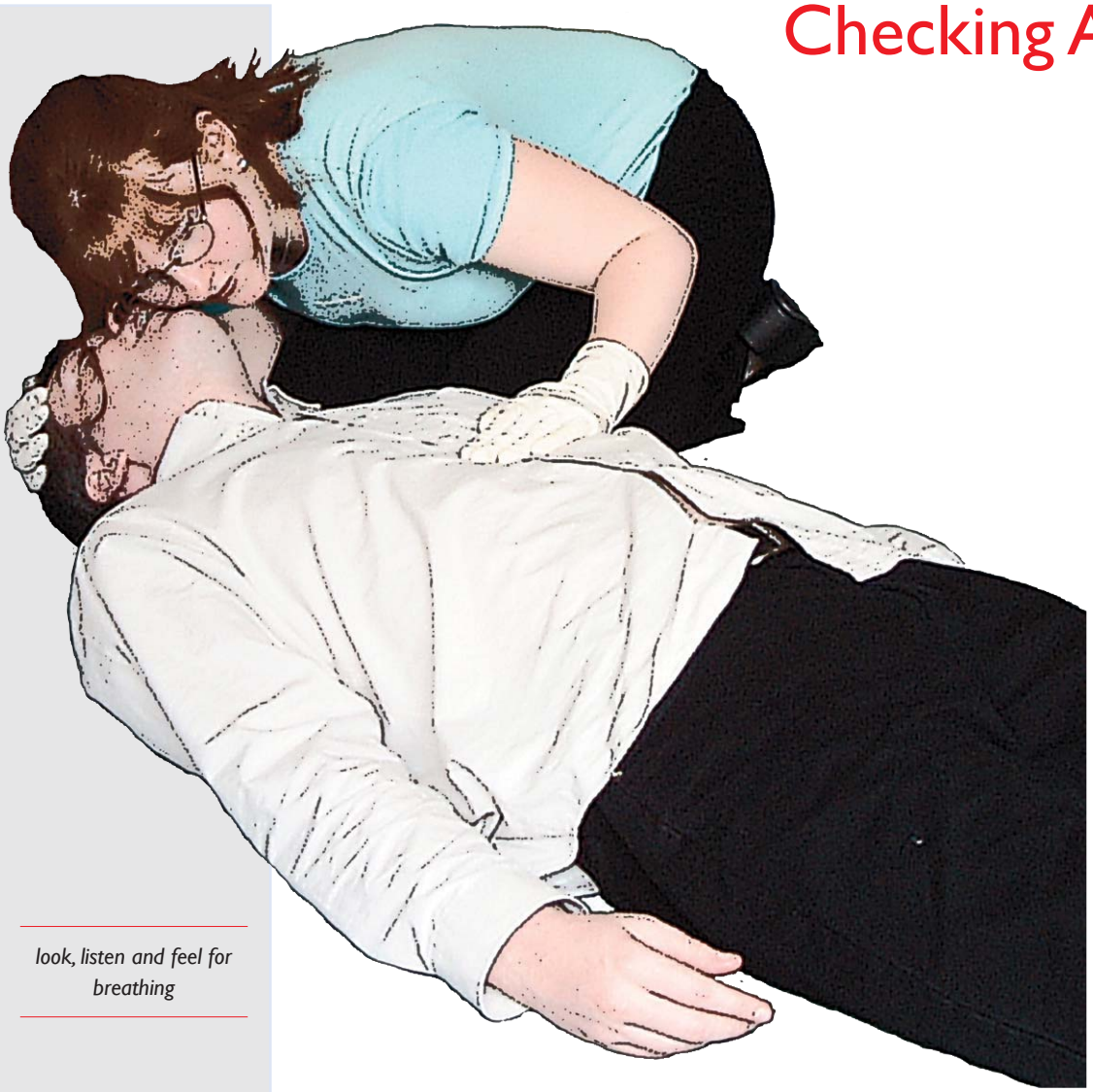
Open the airway and lift the tongue clear by head tilt and chin lift.

If their airway is completely blocked or they are choking, immediately begin treatment for choking.

Any other obstructions should be removed using a finger sweep. Do not probe too deeply as you may push any foreign body or vomit more deeply into the airway.

Small amounts of vomit or saliva can be ignored in this situation.

B



look, listen and feel for breathing

B = Breathing

Once you have cleared the airway as far as you can see, check if the patient is breathing.

Keeping the head tilted and chin lifted, look listen and feel for breathing.

Look at the chest to see if it is rising and falling. Remember that if the chest is moving up and down but there are no breath sounds, the airway may be obstructed.

Place your cheek over their mouth and nose to feel for air movement and place a hand on the lower part of the chest to feel if they are breathing. Listen carefully for breath sounds from the mouth and nose, but remember that gurgling or choking or wheezing sounds may be the result of a partially obstructed airway.

Check for breathing for 10 seconds.

If the patient is breathing, move on to check for signs of circulation.
(Pages 32-33)

If the patient is not breathing normally, immediately give 30 chest compressions (Pages 40-45)

and then check for signs of a circulation (pages 32-33).

check for normal breathing for at least ten seconds

C

check for circulation by looking for signs of life

C = Circulation

Checking for circulation

Checking for a pulse is unreliable and wastes time unless you are well-practised.

Instead, check for circulation by looking for signs of life. Look at the patients skin colour, which, if there is no circulation, will generally be purple, grey or blue, with or without blotchy patches.

Look for movement of the limbs or the chest or swallowing movements. The patient may be groaning or sighing. If there is no circulation, the patient will not be moving at all. Sometimes, at the moment of cardiac arrest, the patient appears to have a fit, but this generally stops after a few seconds. Sometimes the patient takes infrequent, noisy gasps, do not confuse these with normal breathing.

Checking for a pulse

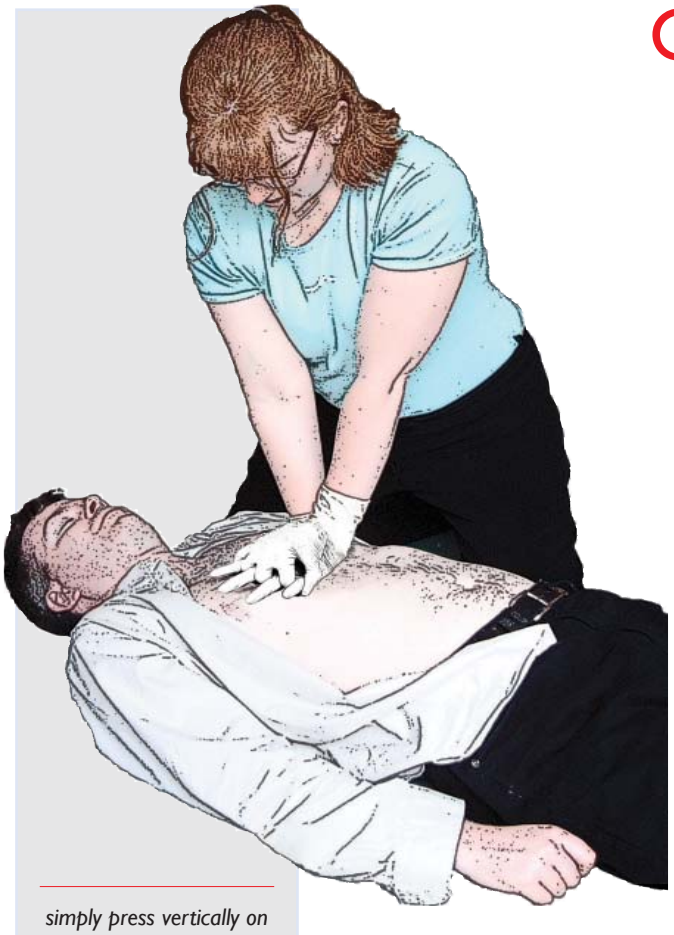
If you are experienced and do check for a pulse, always use the carotid pulse as it is the easiest to find. The pulse at the wrist is completely unreliable for checking in cases of suspected cardiac arrest, as it is often weak and difficult to find even in a well person.

To check for a carotid pulse, gently place two fingers on the Adam's Apple (do not press here) and slide them back towards you into the groove between the Adam's Apple and the neck muscles.

Press your fingers gently inwards to feel for a pulse with your fingertips. Check carefully for at least ten seconds as the patient may sometimes have a very slow pulse. Do not press directly on the Adam's Apple as this may block the airway.

"checking for a pulse wastes time and is unreliable unless you are well-practised"

Chest compressions



simply press vertically on the centre of the chest

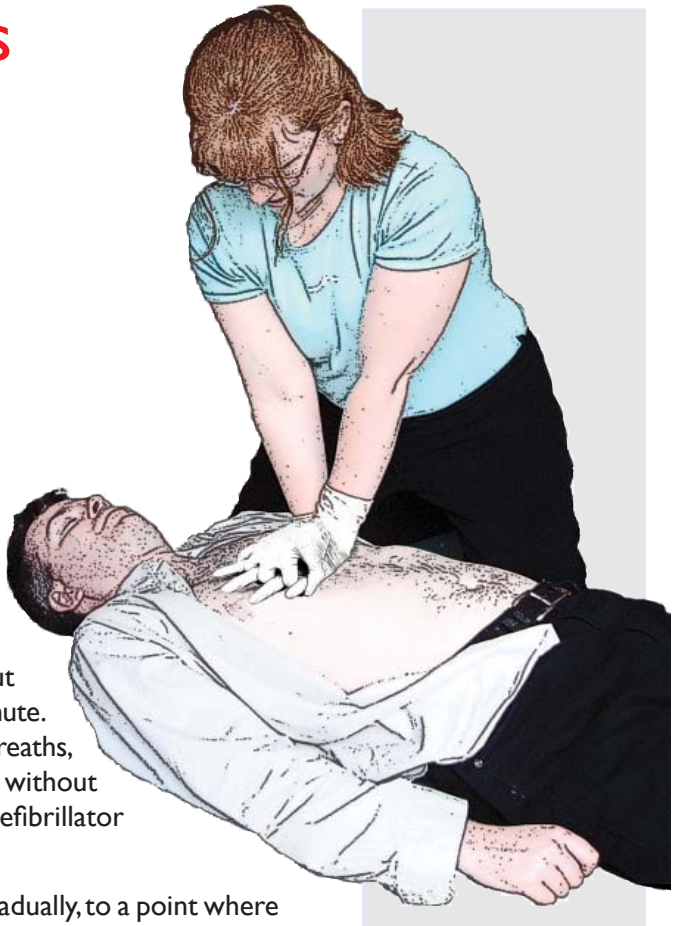
Hand position

Kneeling beside the patients head, you should be able to reach their chest to give chest compressions. The actual method of chest compression is very simple, involving pressing vertically on the centre of the chest.

keep the fingers clear of the chest

Place one hand on the centre of the chest, place the heel of your other hand on top and interlock your fingers. Note that your fingers should be kept clear of the chest.

Chest compressions



Arm position

Position your shoulders directly above your hands and straighten your arms. Pump up and down about 4-5 centimetres at a rate of about 100 pumps per minute. Give thirty compressions and then give two rescue breaths, repeating this 30:2 ratio for as long as necessary, without stopping to make further checks except when the defibrillator prompts you to stop.

Compressing the chest raises the blood pressure gradually, to a point where some circulation to the brain is achieved, but a long pause for checks will allow the pressure to fall and it will need to be raised again before blood reaches the brain again.

Only remove your hands from the correct position when you need to give rescue breaths or shocks. Once the chest has been compressed, you will need to release the pressure in order for the heart to refill, but always keep contact with the skin and do not bounce up and down on the chest.

Only remove your hands from the correct position when you need to give rescue breaths or shocks

If the patient shows any signs of life, make the ABC check again, but otherwise keep going until the ambulance arrives and the crew takes over, or you become exhausted.

CPR is extremely tiring so you should conserve your energy as much as possible. Always kneel as close to the patient as possible and keep your shoulders above your hands. This uses your own bodyweight to compress the chest, rather than using your arm muscles.

If there are two rescuers, the ratio of rescue breathing to chest compressions remains at 30:2. Two rescuers makes the whole procedure less exhausting and more efficient as they are able to swap over every two minutes.

Only remove your hands from the correct position when you need to

Airway management

In an unconscious patient, the main causes of airway obstruction are the tongue, vomit and foreign bodies

Signs of obstruction

Once you have determined that a patient is unconscious, the first priority is the checking and management of their airway. Without a clear airway, oxygen supply to the lungs, and therefore the brain, will be reduced or completely cut off.

In an unconscious patient, the main causes of airway obstruction are the tongue, vomit and foreign bodies.

If an unconscious patient is left sitting up or on their back, the tongue may fall back and block the airway. Signs of an airway blocked by the tongue are a complete lack of breathing or noisy breathing with snoring and snuffling.

Head tilt - chin lift

If they have to remain on their back, as for CPR, tilt the head back and thrust the jaw forwards. As the tongue is attached to the lower jaw, this will draw the tongue forwards and away from the back of the throat.

The finger sweep can be used to make sure the tongue is forward. If they do not require CPR, place them in the recovery position. When the head is tilted back at the end of this manoeuvre, the tongue is drawn away from the back of the throat and the position of the patient also allows the tongue to fall forwards under gravity.

Airway management

do not put your fingers into the back of the throat, as any vomit may be pushed into the airway

Clearing the airway

Unconscious patients have no control over their airway, with no gag or cough reflex. Any vomit that comes from the stomach via the relaxed throat will be inhaled into the lungs. It is therefore important to clear the airway of vomit and secretions as soon as possible, not only in preparation for CPR, but in all unconscious patients. The finger sweep should be used, but do not put your fingers into the back of the throat, as any vomit may be pushed into the airway. If you place the patient in the recovery position, vomit will tend to flow out of the mouth and airway, but keep checking the airway for vomit and clear it as necessary with finger sweeps.

Foreign bodies, such as a lump of meat, may not fall out of the airway, even when you use head tilt and jaw thrust or place the patient in the recovery position. Part of checking the airway is to look in the mouth for foreign bodies. Part of checking for breathing is to check for foreign bodies. You should attempt to clear any obstruction using the choking procedures (pages 70-71). Do not poke about in the back of the mouth as you may push the foreign body further into the airway, completely blocking it.

If the patient is not to receive CPR, they must be placed in the recovery position to protect their airway.

"do not poke about in the back of the mouth"

Airway management

Oropharyngeal (OP) airway

Unconscious patients are in danger of their airway being blocked by the tongue. If CPR is to be carried out, the patient will have to stay on their back. The tongue, being large and floppy, will tend to fall back and block the airway. This can be avoided by the use of an oropharyngeal (OP) airway, which consists of a plastic tube shaped to fit the mouth and tongue, reaching to the back of the tongue. There is a flange at the mouth end to prevent the OP airway slipping into the patients airway.

OP airways are available in various sizes, as follows:

00	for small babies
0	for infants
1	for children
2	for small adults
3	for large adults
4	for very large adults

To select the correct size of OP airway, place one of roughly the correct size on the side of the face. The correct size should reach from the centre of the teeth to the angle of the jaw, or alternatively from the corner of the mouth to the earlobe.

Insertion of the OP airway is a sequence of actions which is designed to ensure the tongue is held in the correct place and also to prevent damage to the soft tissue in the mouth during insertion.

Not all schemes will allow First Responders to treat children. However, where this does happen, it should be noted that sizes 00, 0 and 1 (i.e. in children) the airway should be first inserted with the inside of the curve facing the tongue, whereas with sizes 1,2 and 3 (i.e. in adults) the OP airway should start with the inside of the curve facing away from the tongue and the OP airway rotated halfway through the sequence. Also, with babies and small children, a small wooden spatula should be used to help insertion. This is because children's mouths are much more susceptible to damage and great care should be taken when dealing with young airways.

Airway management

In adults, start with the inside curve of the flange facing away from the curve of the tongue.

In children, start with the inside curve of the flange facing on to the curve of the tongue.

Oropharyngeal airway insertion

First, ensure the airway is open using head tilt and chin lift or jaw thrust as appropriate. Ensure that the airway is clear of blood, vomit etc.

In children, (using sizes 00, 0 and 1) start with the inside curve facing on to the curve of the tongue and gently push it into the mouth, following the curve of the tongue, so that the outer flange is resting on the lips. In babies and small children, due to the relatively large size of the tongue, a small wooden spatula should be used to open the way for the OP airway. This will also reduce the likelihood of damage to children's delicate soft tissue in the mouth. If there is resistance, it may be that the OP airway needs a slight twisting back and forth to ensure that it is over the tongue. Do not force the OP airway into the mouth.

In adults, (using OP airways of sizes 2, 3 and 4) starting with the inside curve of the OP airway facing away from the curve of the tongue, gently push it into the mouth to about half it's length. Turn the OP airway through 90° so that the curve fits the shape of the tongue and gently push it all the way in following the curve of the tongue, so that the outer flange rests against the lips. If there is resistance, it may be that the OP airway needs a slight twisting back and forth to ensure that it is over the tongue. Do not force the OP airway into the mouth.

If the patient tries to reject the OP airway, which they will show by gagging, pushing the OP airway out with their tongue or becoming restless, immediately remove the OP airway as it is not needed at that time. If the patient remains unconscious, you still need to protect their airway by placing them in the recovery position.

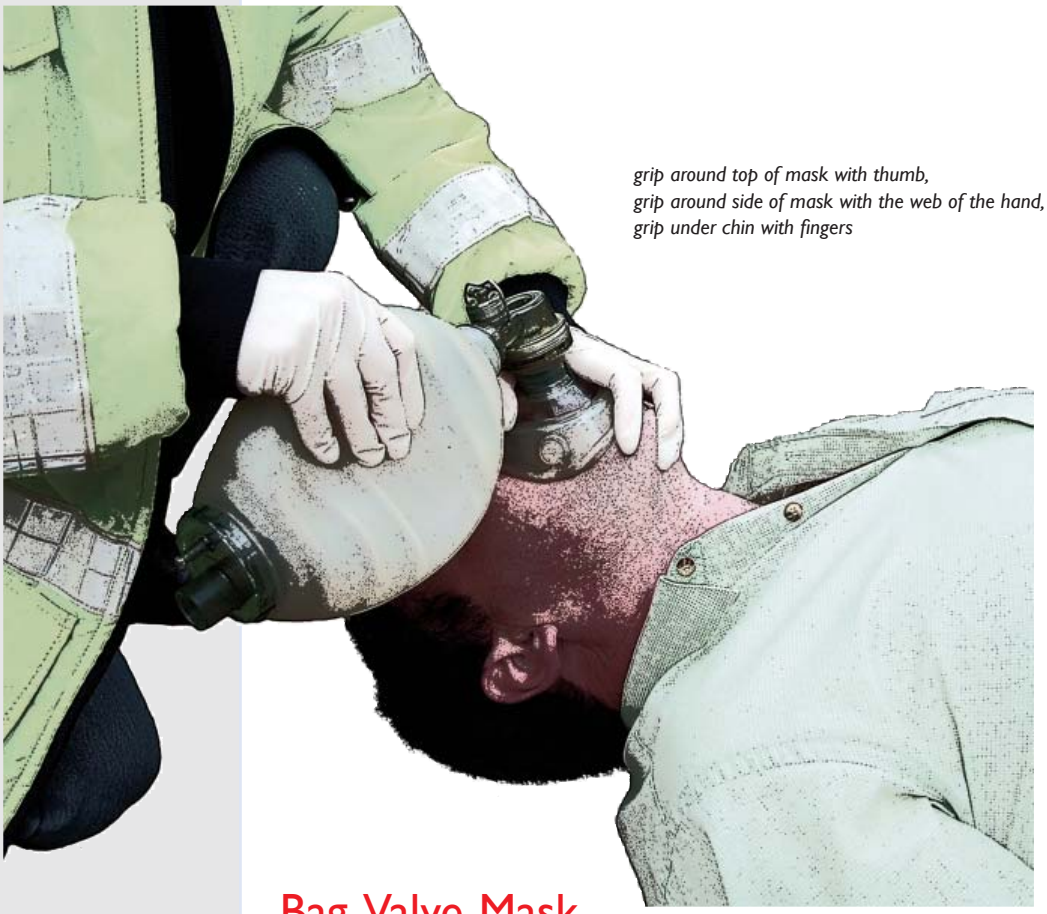
Airway management

Insert to halfway and turn through 90°

Insert completely, to end with the flange resting on the lips

Use of an OP airway does not remove the need to keep checking that the airway is clear, it just keeps the tongue out of the airway.

Rescue breathing



grip around top of mask with thumb,
grip around side of mask with the web of the hand,
grip under chin with fingers

Bag-Valve-Mask

Using a bag-valve-mask is the most efficient, least tiring and most pleasant way to provide rescue breathing. It is called this because there is a bag to provide the air pressure, a one-way valve to allow air out without removing the mask and breaking the seal, and a mask to provide a seal at the face.

Starting from a kneeling position at the patients head, open and clear the airway and insert an oropharyngeal airway. Place the mask over their mouth and nose and seal it to the face using the web of one hand down the side of the mask. Use the thumb to grip the nose end of the mask and the fingers to grip the mouth end. Curl the fingers to reach over the mask and grip the chin in the fleshy part under the jaw.

Using this grip, tilt the head back and lift the jaw to fully open the airway.

Squeeze the bag firmly, taking about one second to push the air into the lungs, sufficient to make the chest rise as in normal breathing. First Responders with small hands may need to squeeze the bag against their knee to achieve enough air flow.

Release the pressure on the bag, but do not let the mask go. The air will flow out of the chest under it's own pressure and out the non-return valve. Repeat this to achieve two good inflations with a gap of about two seconds.

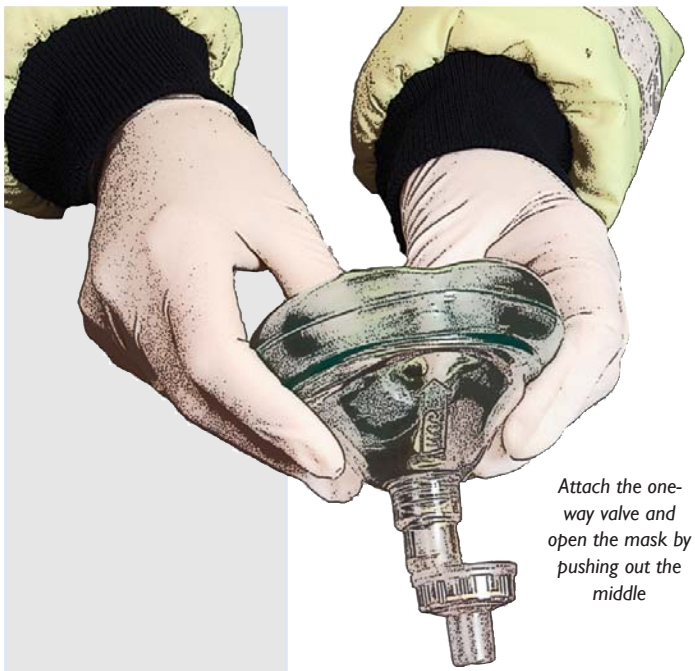
Should you not be able to achieve a chest rise, make up to five attempts. Each time, make sure that the head is tilted and the jaw lifted sufficiently to open the airway. If still unsuccessful, go to the choking procedure.

Should you be equipped with oxygen, attach the oxygen supply to the small nipple on the end of the bag. This will achieve nearly 100% oxygen flow to the patient.

If chest compressions are required, these can be achieved by reaching down over the patient and compressing the centre of the chest. There is no need to change positions to the side of the patient.

Remember to keep the arms as near vertical as possible and locked. Keep the fingers off the chest.

Rescue breathing



Attach the one-way valve and open the mask by pushing out the middle

Grip around the mask with fingers and thumbs

Pocket Mask

Your First Responder scheme will provide you with a method of rescue breathing without using mouth-to-mouth. One device is the pocket mask. The mask has a non-return valve built in so that any secretions or vomit in the patient's mouth will not be passed into yours.

Using a pocket mask for rescue breathing is probably one of the most difficult single skills involved for First Responders. However, use of the mask can be mastered with a little practice.

The mask is stored folded, so the one-way valve needs to be attached and the inside needs to be pushed out before use, as illustrated above.

Clear the airway and insert an oropharyngeal airway, as previously described.

Position yourself beside the patient's head. Tilt the patient's head back and place the mask over their mouth and nose. Clamp the mask to their face with thumb and forefinger of one hand at the chin end and the thumb and forefinger of the other hand at the nose end. Thrust the jaw upwards by placing the fingers at the chin end behind the angles of the jaw. The head tilt and chin lift must be maintained whilst clamping the mask on to the patients face and during rescue breathing.

Using a pocket mask for rescue breathing is probably one of the most difficult skills involved for First Responders

Blow through the mask for one second or until the chest rises as in normal breathing, making sure you have a good seal. If air escapes around the mask, press more tightly and adjust the position of the mask until a seal is achieved. After a successful breath, remove your mouth and take a deep breath away from the mask. Watch for the chest to fall.

Give two consecutive effective breaths, one after the other. If the chest does not rise during a breath after five attempts, check for airway obstruction, check for correct head tilt and chin lift and check for a good seal around the mouth.

If you succeed in making the chest rise twice, move on immediately to checking for a circulation.

If, after 5 attempts, you still have not achieved a chest rise, move on to checking for signs of circulation anyway. Even though you are not able to breathe for the patient, if they have no circulation the chest compressions will circulate the remaining oxygen in the blood until more skilled help arrives.

Check for signs of a circulation about every ten breaths and be prepared to start chest compressions if necessary. The patient may start breathing for themselves, but this is unlikely in a full cardiac arrest. If they do, place them in the recovery position to protect their airway, as vomiting is common when breathing restarts.

make sure you have a good seal

Rescue breathing

Mouth-to-mouth

This is probably the most unpleasant part of the First Responder role and should be avoided by using a bag-valve-mask or pocket mask. However, if you do not have a bag valve mask or pocket mask, mouth-to-mouth is the only effective method of inflating the lungs.

If you feel you cannot perform mouth-to-mouth, either because you do not wish to, the mouth is injured, or you cannot obtain a good seal (perhaps because they have a heavy beard) it is acceptable to go straight to chest compressions, as the body will have some oxygen still circulating. However, CPR without ventilations is only effective for about 5 minutes after cardiac arrest.

Should you decide to perform mouth-to-mouth, begin by positioning yourself at the side of the patients head, facing sideways across them. Tilt their head back and close their nose by placing the palm of your hand on their forehead and pinch their nose with the thumb and fingers. With the fingers of your other hand, lift the point of their chin to open the airway and mouth.

Take a breath and place your mouth over theirs, making sure you have a firm seal. Breathe slowly into the patient for one second, or until the chest rises as in normal breathing. Take your mouth away and take another breath clear of their face. Watch for the chest to fall. Place your mouth over theirs again and give another breath. If the patient is very small, you may be able to cover their mouth and nose at the same time with your mouth and will not need to pinch their nose closed.

Give two effective breaths, one after the other, the same as in using the pocket mask. If the chest does not rise during a breath after five attempts, check for correct head tilt and chin lift and check for a good seal around the mouth.

mouth-to-mouth is probably the most unpleasant part of the First Responder role

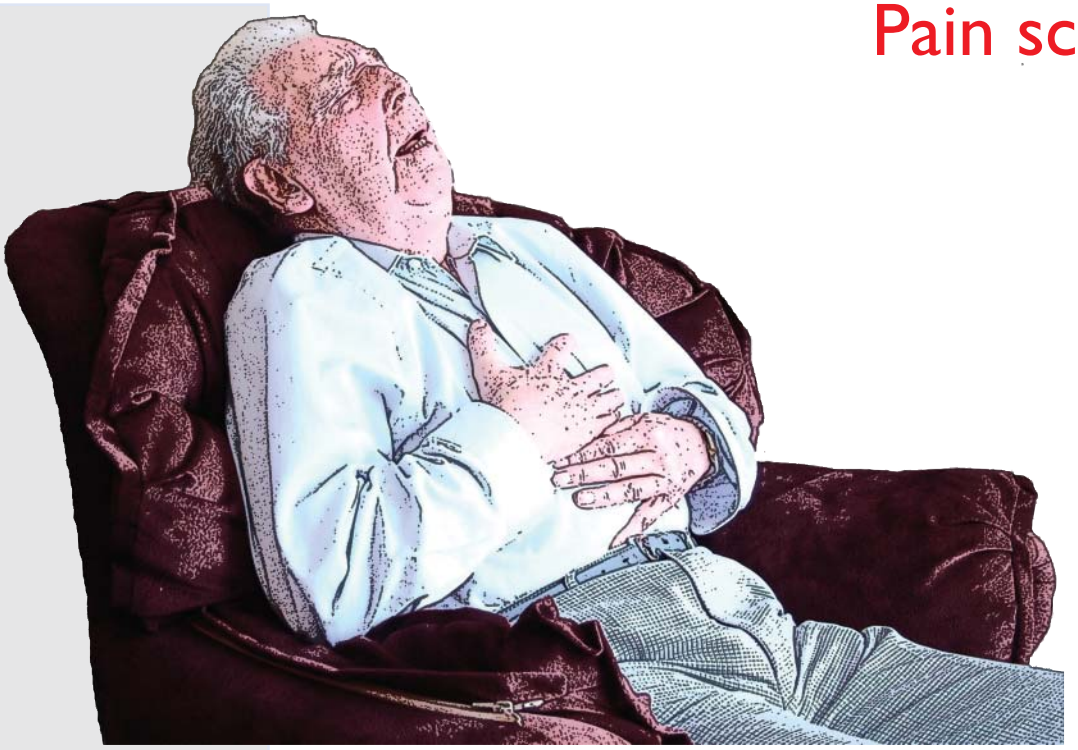
If you succeed in making the chest rise twice, move on immediately to checking for a circulation.

If, after 5 attempts, you still have not achieved a chest rise, move on to checking for signs of circulation anyway. Even though you are not able to breathe for the patient, if they have no circulation the chest compressions will circulate the remaining oxygen in the blood until more skilled help arrives.

With all types of rescue breathing, if you are sure there is a circulation, keep breathing for the patient until they start to breathe for themselves, until the ambulance arrives and the crew take over or you become exhausted.

Check for signs of a circulation about every ten breaths and be prepared to start chest compressions if necessary. The patient may start breathing for themselves, but this is unlikely in a full cardiac arrest. If they do, place them in the recovery position to protect their airway, as vomiting is common when breathing restarts.

Pain scoring



some people will want relief from pain of any intensity

When dealing with a patient in pain, it is important to record the intensity of the pain. Often they will say that it hurts "a lot" or "a little", but this is very imprecise and makes it difficult to measure any improvement or deterioration in their condition.

Ask the patient to give the pain a score on a scale of one to ten, where one is very slight pain and ten is the worst pain they can imagine. Ask the patient to give the pain score for the time when the pain first started, before any treatment and after any treatment.

Ask them where the pain is, and in the case of chest pains, whether it radiates down the arms or into the back or neck. Ask them to describe the nature of the pain, such as a stabbing pain or a dull pain or a crushing sensation.

Patients with a pain score of three or more will usually require some form of medication for pain relief. However, some people will want relief from pain of any intensity.

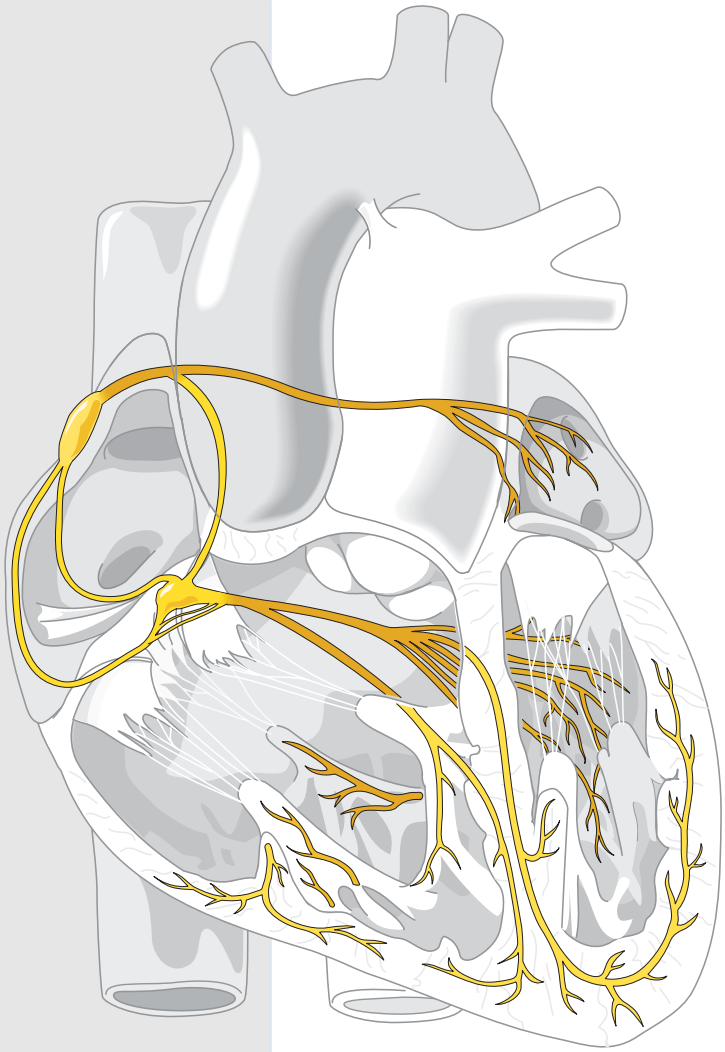
Any medication can only be given by the patient's doctor or the ambulance crew on their arrival, not by the First Responder.

First Responders cannot prescribe any medication for any patient, not even a paracetamol tablet. If a patient is having chest pains, however, you may suggest and assist them to take their own GTN spray or tablets, (glyceryl trinitrate) which may (but not always) provides some pain relief within a few minutes. If they do not have GTN prescribed by their doctor, do not allow any relatives or bystanders to offer theirs, as it may be an inappropriate treatment and make matters worse.

Often, in injury, the correct treatment such as keeping a fractured limb still, will provide pain relief. It is also an established fact that 30% of people have pain relieved to some degree just by being reassured and competently dealt with by a trained person, including First Responders.

"First Responders cannot prescribe any medication for any patient"

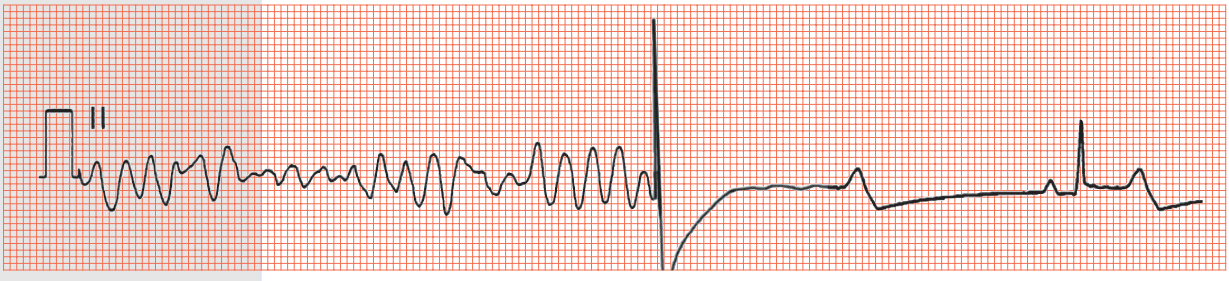
Semi-automatic defibrillation



Ventricular Fibrillation (VF)

Under normal circumstances, the heart beats because an electrical signal passes down the heart in special pathways to make the heart muscle contract. If this signal is normal, the heart achieves a pumping action to circulate blood around the body. A heart attack or other serious problem with the heart may cause the heart to have chaotic electrical activity and the heart will just quiver instead of beating. This is known as ventricular fibrillation or VF. There is no circulation of blood and the patient is in cardiac arrest.

A defibrillator delivers an electrical shock to the heart. This is known as defibrillation and is an attempt to stop the chaos and allow order to resume. Success means that a normal heartbeat is restored.



All semi-automatic defibrillators work in the same way, each following a 1–2–3 process

The term "semi-automatic defibrillation" means that the defibrillator automatically analyses the heart rhythm and will detect ventricular fibrillation, but an operator has to be prompted to press a button to deliver any necessary shock. All semi-automatic defibrillators work in the same way, each following a 1–2–3 process. The only differences are the way the operator prompts are given and the number of buttons to be pressed before a shock is delivered. First Responder training incorporates full instruction in the machine used by the Scheme.

All defibrillators deliver a shock that can stop a beating heart, so there must be nobody touching the patient whilst the shock is being delivered. It is mandatory to visually check for anybody touching the patient and shout **"stand clear"** before pressing the "shock" button. Also, as shocks travel well through water, the patient must have a dry chest and not be lying in water.

In addition, the patient should not be touched whilst the machine is analysing, as signals from the rescuer or bystander may confuse the machine and result in no shock being advised when one is necessary. A good signal is required, so the electrode pads must be firmly stuck to the patients bare skin. Excessive chest hair where the pads are to be placed should be shaved.

"All defibrillators deliver a shock that can stop a beating heart"

Semi-automatic defibrillation

1

turn on

The following assumes a First Responder working alone.

Check the airway and clear it if necessary. Check for breathing and if the patient is not breathing normally, press the "power" or "on" button to activate the defibrillator and follow the voice or screen prompts.

Rapid defibrillation is important. The chances of recovery halve with every minute delay before a shock is delivered. Ideally, a shock should be delivered within 8 minutes after the heart has stopped.

If there are two rescuers, one should operate the defibrillator and one should carry out CPR at a rate of 30:2.

Semi-automatic defibrillation

2

follow prompts

Bare the patients chest. Remove any metal necklaces or other jewellery. Look for any GTN patches, which look a little like an ordinary plaster, and remove them. Use the razor to shave the areas where the pads will be placed. Make sure the chest is dry and that the patient is not lying in water.

Open the sealed electrode pad package. Electrode pads that have not been kept in a sealed package may have dried out and will not transmit a proper shock. Place the pads on the bare skin of the chest, pressing them firmly to ensure a good seal. Place one at the right shoulder, directly under the collar bone and the other on the left side of the chest, about 10cm (4") below the armpit. Each pad has a diagram showing you where they should be placed. (The left pad may have an out of date diagram, and should be placed vertically, as shown.)

The defibrillator will prompt you to plug the electrode cable into the defibrillator. Placing the pads and then plugging in the cable must be carried out in the correct order to avoid any risk of shock to the rescuer.

Listen for voice prompts and/or check the screen display if the defibrillator has one. The defibrillator will analyse the heart rhythm, and if ventricular fibrillation is present, will charge itself ready for a shock and prompt the operator to press the shock button at the right time.

Do not touch the patient, even for CPR, whilst the machine is analysing or when a shock is being given.

Semi-automatic defibrillation

3

press shock if advised

Shock advised

If a shock is advised, the defibrillator will prompt the operator to press the shock button. Visually check in front, behind and beside you that nobody is touching the patient and shout **"STAND CLEAR !"**. When everybody is clear, press the shock button and a shock will be delivered. There is no loud noise, just a click from the machine. The shock will usually make the patient jump or arch their back. This does not mean that they have recovered, but is just the electric shock making the muscles contract. Because of this jump, it is important to ensure that you are far enough away from the patient in case their arm touches you.

After the shock is given, the machine will prompt you to not touch the patient, as it will be re-analysing the heart to check if the shock has restarted a proper rhythm. If no signs of life are present, continue CPR at 30:2 until the defibrillator prompts you to stand clear whilst it re-analyses the heart. The defibrillator will allow for two minutes of CPR then prompt you to not touch the patient while it re-analyses the heart rhythm.

This cycle will continue indefinitely whilst there are no signs of life, but the pads must be changed after 12 shocks as the electrode gel will dry out.

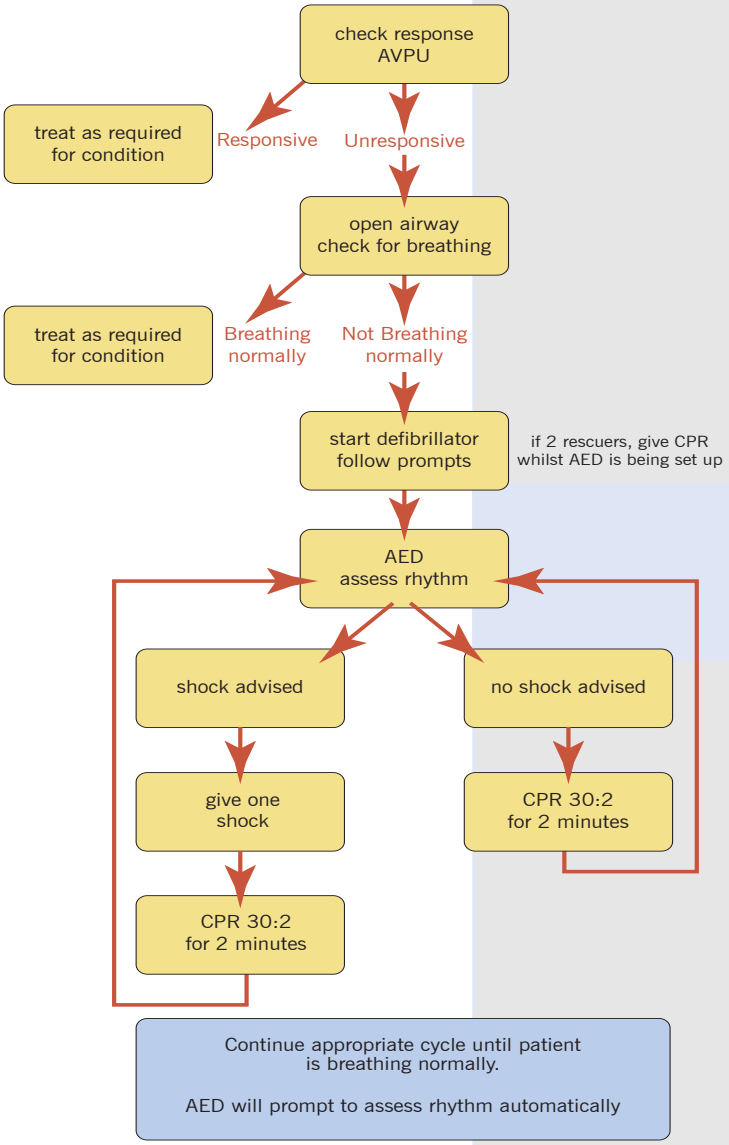
No shock advised

If no shock is advised, this means that the heart is not in ventricular fibrillation. This does not mean that the heart is functioning correctly or that the patient is dead, just that a shock is not the correct treatment.

The defibrillator will prompt you to continue CPR as necessary. Every two minutes, the defibrillator will advise you to stop CPR and allow the defibrillator to re-analyse the heart rhythm. Do not touch the patient during this analysis.

The CPR – analyse – shock/no shock cycle must continue uninterrupted until the ambulance arrives and the crew takes over, until the patient recovers or until you become exhausted.

Semi-automatic defibrillation summary



Follow the arrows

On arrival, check for response on the AVPU scale.

If the patient is unresponsive, open and check the airway. Clear it if necessary.

Check for breathing. If the patient is breathing normally, place them in the recovery position, as their heart will be beating.

If the patient is not breathing normally, attach the defibrillator pads, plug in the cable and press the analyse button.

Do not touch the patient whilst the machine is analysing.

If a shock is advised, press the shock button when instructed. Allow the machine to reanalyse. Following the shock, give CPR at 30:2 for two minutes. The machine will then prompt you to stop CPR whilst it analyses the heart rhythm.

If no shock is advised, give CPR at 30:2 for two minutes. The machine will then prompt you to stop CPR whilst it analyses the heart rhythm. If the patient is breathing normally, place them in the recovery position.

Keep a close check on the patient if you place them in the recovery position.

Recovery position

An unconscious patient is in danger of the airway being blocked by the tongue and vomit

Natural drainage

An unconscious patient is in danger of the airway being blocked by the tongue and vomit. They may also inhale vomit into the lungs. If the patient is positioned correctly - in the recovery position - the tongue will fall forwards and any vomit or secretions will drain naturally out of the mouth.

Recovery position

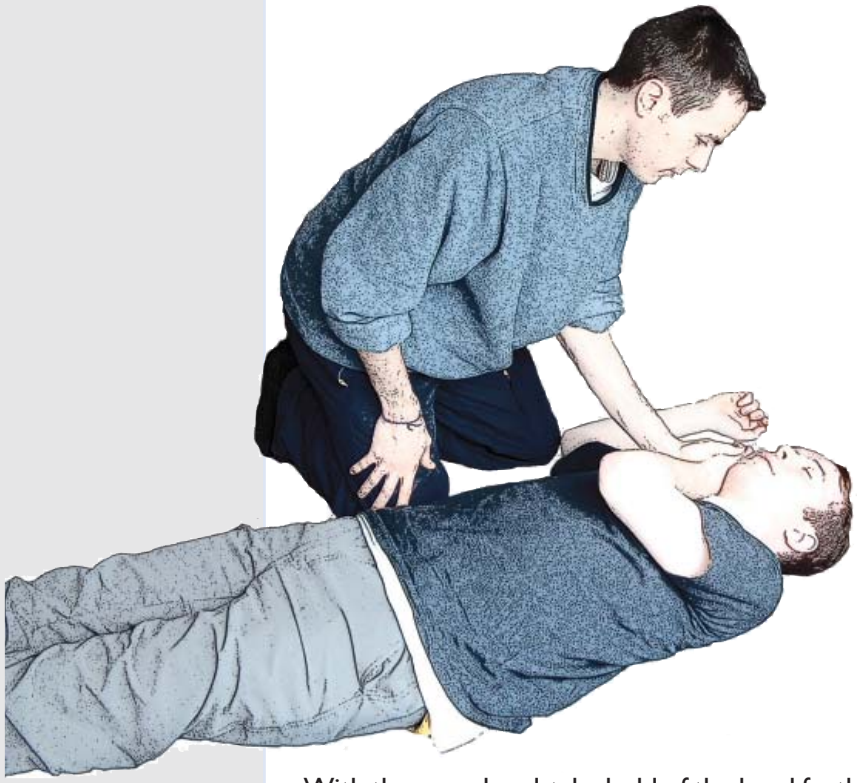
Position the patient on their back, with their arms and legs straight, in line with their body. Kneel beside them at their waist. Remove their spectacles and any keys or other sharp objects from their pockets and, if possible, ask a relative to look after these for you.

Open their airway by head tilt and chin lift.

Using your hand that is nearest their head, place their arm that is nearest you at right angles to their body, with the elbow bent and the hand palm-up at their head level.

Recovery position

2



With the same hand, take hold of the hand furthest from you and interlock your thumb with theirs. Bring the hand across the body towards you and hold the back of their hand next to their nearest cheek.

3

Using your other hand, take hold of their thigh that is furthest from you and pull the knee up to place their foot flat on the floor. Pull this knee towards you, if necessary shuffling backwards, to roll the patient towards you onto their side.

Recovery position

4

Make sure their airway is still open by adjusting their head position if necessary, and bend their upper leg to prevent them rolling back. Place their upper hand under their cheek.

5

Keep checking their ABC at about one minute intervals. If they show signs of cardiac arrest, roll them on to their back again and begin CPR and defibrillation as necessary.

If you are unable to roll the patient into the recovery position, perhaps because they are too heavy, or there is not enough room, you must be especially vigilant about their airway, keeping a very close check that it does not become blocked by the tongue or vomit. Maintain the head tilt and chin lift by hand. You may need to clear their airway using a finger sweep.

In the unlikely event they have to be kept in the recovery position for more than 30 minutes, turn them to the opposite side to relieve the pressure on the lower arm.

keep checking their ABC at one minute intervals

Oxygen Therapy

Oxygen is a colourless, odourless gas and makes up approximately 21% of the air we breathe. Oxygen is essential to life and oxygen therapy is very useful in almost all incidents that a First Responder will attend.

Medical oxygen cylinders have a black body and a white shoulder, as shown. There are many kinds of cylinder and valve systems available and your First Responder scheme will train you to use the type in use in your area. However, there are some universal rules for the storage and use of oxygen, which are detailed below.

Safety

Do not smoke when using oxygen. Although oxygen itself does not burn, it strongly supports combustion and materials which burn in air are ignited more easily and will burn more fiercely.

The cylinder and valve must be undamaged.

Do not use excessive force when turning the cylinder on or off as the valve may be damaged.

Never use any oil or grease on the cylinder or valves. Oxygen is a strong oxidant and may cause a fire or even an explosion.

When a cylinder is a quarter full, replace it.

Keep empty cylinders separately from full ones. This will avoid picking up the wrong cylinder in an emergency.

Do not roll or drop cylinders. They may be damaged.

Store cylinders in a well-ventilated place.

Oxygen Masks

Oxygen is delivered to the patient through a mask. The exact type of mask used will depend on your scheme.

The usual type of mask will have a face-piece with a reservoir bag attached and an integral delivery tube. There is an elastic head strap and a nose-clip to ensure a good seal. This will deliver a high-percentage flow of oxygen (typically above 60% as compared with the 21% in room air), if the mask tightly fits the face. This will be useful in all cases where oxygen therapy is indicated.

Oxygen masks are single-use and should be disposed of after use.

Oxygen Therapy

Oxygen therapy is used in most of the conditions encountered by First Responders, except for certain circumstances, as detailed below. Oxygen therapy is not mentioned in the various pages dealing with specific conditions or incidents as some schemes will not include oxygen in their available therapies and this may cause confusion, but if you have oxygen available, you should use it as detailed below.

CPR - High percentage oxygen is required for CPR because the patient is not breathing and may not have been breathing for some time, so their oxygen reserves are low. Studies have shown that oxygen is useful in CPR.

Trauma - Blood loss, whether external or internal will deprive the body's tissues of the oxygen supply. Oxygen therapy will increase the percentage of oxygen in the remaining blood. Head or chest injury may cause the patient to have a reduced rate or reduced efficiency of breathing, so a raised percentage will assist the delivery of oxygen to the blood.

Chest pains, heart disease and heart attacks - These will reduce the blood flow round the body and also the damaged heart requires more oxygen to help it recover.

Asthma and other lung diseases - The lungs cannot efficiently transfer oxygen from the air, so a raised concentration will get more oxygen across into the blood.

The exceptions

If you find that the patient is on their own oxygen supply at home, take care when giving high-percentage oxygen therapy. Due to a rare complex metabolic cause, high percentage oxygen might possibly make the patient become drowsy and reduce their breathing rate and depth. If this happens, immediately remove your oxygen supply and put them back on to theirs, which will have a much lower percentage rate (usually 24% - 28%). It must be stressed that these patients still need oxygen therapy and the reduction in breathing is a rare event.

In exceptional circumstances, you may be called to a new-born infant. These patients should not receive high-percentage oxygen for long periods. It is unlikely that you will be with the patient long enough to cause any problems, but to be safe, do not apply the oxygen face-mask directly to the infant. Play the oxygen over their mouth and nose from a distance of 15cm (6") directly from the supply tube.

Section Four

Action at an incident

Unconscious patients

Patients may become unconscious for many reasons, many of which you will not discover as a First Responder. However, a proper assessment should reveal those conditions that you are trained for and these should be treated where appropriate.

After finding that a patient is apparently unconscious, the next action is to determine how conscious they are, using the AVPU scale.

A = Alert,

V = Responds to voice,

P = Responds to pain,

U = Unresponsive.

In unresponsive patients, check the ABC - check for a clear airway, check for breathing and check for signs of a circulation. If any of these are absent, clear the airway, and begin rescue breathing and/or chest compressions as necessary.

If you are sure the ABC are all normal, the patient should be placed in the recovery position.

In the recovery position, the patient should be protected from harm and the environment. If they are in a passageway, avoid allowing people to step over them or carry things over them and cover them with a blanket, both for modesty and warmth. If possible, place a blanket in position beforehand, so that when you do place them in the recovery position there is a layer under them as well as over them.

Keep a check on their airway, breathing and circulation at one minute intervals and await the arrival of the ambulance crew.

Chest Pain

If they are unconscious, move immediately to checking ABC and preparing the defibrillator

Chest pain can indicate a serious condition and needs to be assessed and treated as soon as possible. The main causes of chest pain that concern a First Responder are angina and heart attack, (although there are many other causes which are not related to the heart) and although the pain from both has the same basic cause, signs and symptoms, the results from First Responder treatment can be different.

In angina, the blood vessels supplying the heart muscle are constricted, often after stress or exercise, with the result that the blood supply to the heart muscle is reduced. In a heart attack, a blood clot blocks a blood vessel, which again reduces or even completely stops the blood supply to the heart muscle. The main difference as far as First Responders are concerned is that the effects of angina will usually subside with rest and treatment at the scene, whilst the effects of the heart attack will not.

On arrival at the incident, you should adopt a calm, professional and reassuring manner. This will go a long way to reduce the effects of both angina and a heart attack. Make an immediate assessment of the patient, using AVPU for the level of consciousness.

If they are unconscious, move immediately to checking the ABC and preparing the defibrillator, as chest pain can signal an oncoming cardiac arrest.

If the patient is conscious, encourage them to sit or lie down and not walk around. The work being done by the heart has a direct effect on both angina and a heart attack. Loosen their clothing at neck, chest and waist, as many people wear very constrictive clothing and loosening it will aid circulation. A half-sitting position with knees bent usually provides maximum relaxation, but do not force the patient into this position. Do not give the patient anything to eat or drink and have a bowl ready, because angina and heart attack patients often vomit, often without warning. Take a pain score to assess the level of pain and ask the patient about the onset and duration of the pain. Monitor the pulse and respirations every minute.

If the patient has their own medication, such as GTN (glyceryl trinitrate) spray or tablets, encourage them to use it in accordance with the instructions given on the bottle or by their doctor. Often, angina will be relieved by GTN, but a heart attack will not be affected.

Keep the patient calm and at rest. Await the arrival of the ambulance and hand over to them when they arrive.

Trauma

First Responders may be sent to incidents involving serious trauma. However, the treatment for cases of serious trauma is extremely simple. There is no need to learn complex bandaging and splinting, as the ambulance crew will have all the equipment necessary. You will only be required to prevent the injury becoming worse by keeping the patient and the injured part still whilst you wait for the ambulance.

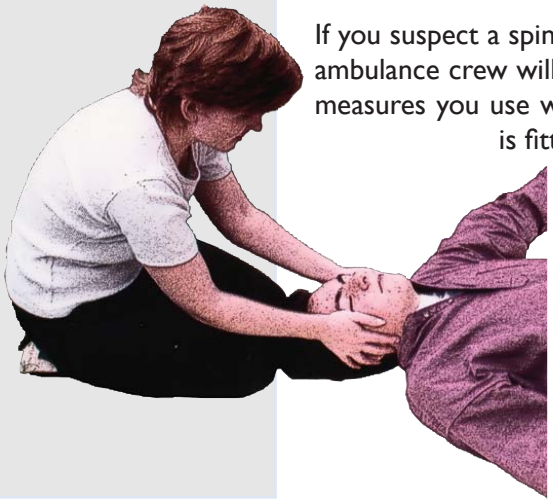
After the normal checks for safety, airway, breathing and circulation, all that is required is to hold the injured part, (such as a fractured arm or leg) still, gently but firmly, and to stop any bleeding.

If there are any restrictions on the injured part, such as rings, watches or bracelets, these should be removed if possible as they may restrict blood flow in case of any swelling.

there is no need for complex bandaging or splints

A spinal injury should be suspected where the patient has any neck or back pain and especially in the following types of cases:

- falls greater than 3 metres (10ft) or down stairs
- head injuries involving loss of consciousness
- high-speed impacts



If you suspect a spinal injury, all that is required is to hold the head still as the ambulance crew will have cervical collars and a trauma board. Any temporary measures you use will have to be removed before the ambulance equipment is fitted.

In cases where a spinal injury is suspected and rescue breathing is required, the head should only be tilted by about 5° to open the airway. The main method of airway opening should be lifting the jaw (jaw thrust).

where rescue breathing is required, the head should only be tilted by about 5°

Severe Bleeding

severe blood loss can lead to unconsciousness or even cardiac arrest

Minor bleeding will only require the application of a sterile dressing, with a bandage or tape to hold the dressing in place. More severe bleeding may require more measures, as severe blood loss can lead to unconsciousness or even cardiac arrest. However, the treatment of bleeding is secondary to any problems with the airway, breathing or circulation. Always treat the ABC first.

Always wear protective gloves when dealing with a patient, as it is particularly important to avoid getting their blood on your hands. The gloves will also give some protection to the patient against infection from you.

In severe bleeding, the patient will often be pale and may be sweating, sometimes with difficulty in breathing and fainting. Lay the patient down, if possible, although they may resist your efforts. If there is no embedded foreign body, such as broken glass, a knife or other sharp object, place a sterile pad over the wound and press firmly to control the flow of blood. If blood seeps through this pad, apply another over the top. Do not remove the first pad as this will disturb any clot that has started to form.

If you cannot apply direct pressure due to a foreign body, press the edges of the wound together to make as good a seal as possible. Do not remove anything embedded in the wound as this may cause very severe bleeding. Any foreign bodies that are just laying loosely on the surface of the wound can safely be removed.

Dress the wound around any foreign body to keep the edges of the wound together, but take care not to move the object. If this is not possible, just hold the edges of the wound together. Take particular care with wounds caused by glass, as broken glass often leaves fragments in the wound which cannot be seen, except with an x-ray. If in doubt about the presence of glass fragments, treat the wound as if broken glass is embedded.

If possible, raise an injured limb above the level of the heart to reduce blood flow to the wound. With the patient laying on the floor, you should also raise the legs above the level of the heart to improve blood flow to the brain and vital organs and reduce the blood flow to the wound.

Never use a tourniquet, as they do more harm than good. Even the bleeding from an amputation can be controlled by a properly applied pressure dressing. Do not wash the wound under running water as this will prevent clotting and disturb any clots that have started to form.

Reassure the patient, but do not give them anything to eat or drink as they may require an anaesthetic when the wound is treated in hospital.

Cardiac Arrest

First Responders are part of a chain

Cardiac arrest means that the heart has stopped beating effectively and there is no circulation of oxygenated blood to the brain. The patient will also be unconscious and will not be breathing. They require rescue breathing and chest compressions, together known as CPR. They may also require defibrillation, an electric shock delivered to the heart.

If the patient is unconscious, with a clear airway and there is no breathing or signs of circulation, or you are at all unsure, assume that the patient is in cardiac arrest. Open the defibrillator and follow the voice prompts.

Do not delay – seconds count. During a cardiac arrest, every minute of delay before defibrillation will halve the chances of a successful outcome.

Remember that you will be unlikely to see a patient return to consciousness. Keep going with CPR and defibrillation until –

- circulation and breathing are restored

or

- you are relieved by somebody more qualified

or

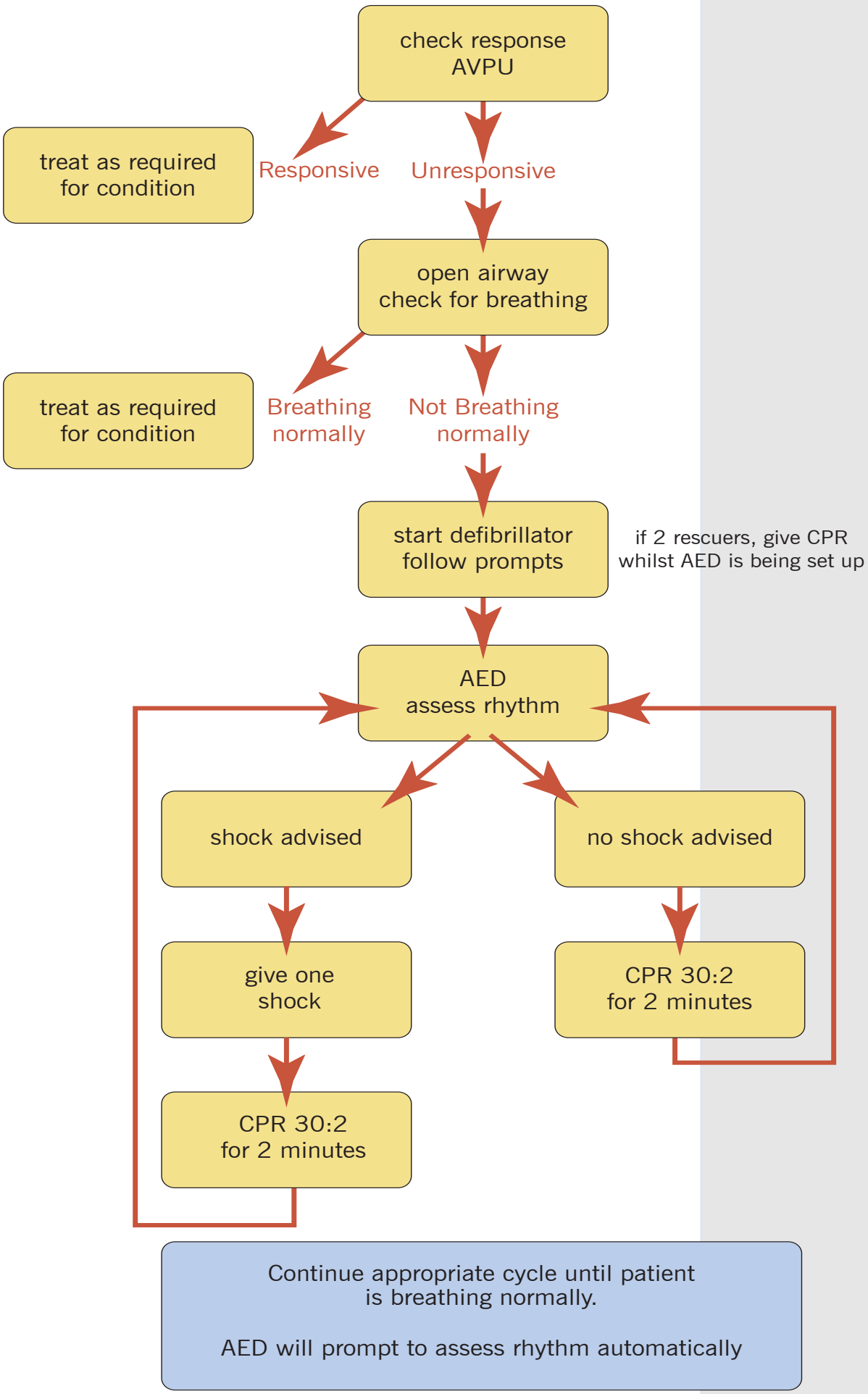
- another rescuer takes over from you

or

- you are exhausted and unable to continue

If circulation is restored, but breathing is not, continue rescue breathing.

If circulation and breathing restart, place in the recovery position.


check response
AVPU
Responsive
Unresponsive
treat as required
for condition
open airway
check for breathing
Breathing
normally
Not Breathing
normally
treat as required
for condition
start defibrillator
follow prompts
if 2 rescuers, give CPR
whilst AED is being set up
AED
assess rhythm
shock advised
no shock advised
give one
shock
CPR 30:2
for 2 minutes
CPR 30:2
for 2 minutes
Continue appropriate cycle until patient
is breathing normally.
AED will prompt to assess rhythm automatically

Choking

Choking is caused when a foreign body, such as a piece of meat, lodges in the throat, partially or completely blocking the airway. Choking usually causes absolute panic in the patient.

the first line of treatment for choking is up to 5 backslaps

If the airway is partially blocked, the patient will usually make huge efforts to cough and clear the obstruction. Their breathing will be difficult and often noisy. Coughing is a reflex action and will usually work. If the patient is breathing, reassure them and encourage them to cough. There is no need to do anything else at this stage.

If the coughing is ineffective and If they are still standing, stand beside them and support their chest with one hand and lean them forward. Deliver up to five sharp slaps between their shoulder blades with the flat of your hand.

If this fails, try abdominal thrusts, also known as the Heimlich manoeuvre. Stand behind them and place your arms around them, under their arms, Clench your fists so that your thumb is towards you. Pull upwards and inwards sharply, up to five times.

If this fails give five more back slaps and then five more thrusts until the obstruction is cleared.

If the patient is not breathing, is unable to cough or begins to weaken, immediate action is required as this will probably mean complete airway obstruction. They will rapidly turn blue around the lips and fingertips as they struggle for a clear airway and oxygen. This lack of oxygen will soon make them collapse and become unconscious.

Unconsciousness with choking

It may be that the airway is blocked for so long that the patient loses consciousness. A consequence of unconsciousness is that all the muscles become limp and this may allow air to pass down the patients airway.

Should the patient become unconscious, carefully lower them to the floor, tilt their head back to open their airway and check for any obvious obstruction, as in the resuscitation procedures. Open their airway further by lifting the chin.

Check for breathing for at least ten seconds. If they are not breathing, make up to five attempts to give two rescue breaths.

If you are successful, immediately check for signs of a circulation, looking for movement, swallowing or any sounds. If necessary, start full resuscitation.

If you cannot give two successful rescue breaths after five attempts, immediately start chest compressions. Do not wait to check for signs of circulation. The chest compressions will cause the pressure in the chest to rise suddenly and may force the obstruction out of the airway.

After 30 compressions, check the airway again for any obstructions and clear if possible.

Continue to give 30 compressions followed by attempts to give rescue breaths, as in full resuscitation.

As soon as you do achieve two rescue breaths, immediately check for signs of a circulation and continue with resuscitation if necessary.

If the patient begins to breathe, make sure the airway is clear and place them in the recovery position as appropriate.

"In unresponsive patients, check their ABC"

Children are different

Some First Responder schemes may send you to incidents involving children. It should be remembered that children involved in incidents are much more likely to be emotionally upset than adults and require careful, gentle handling, as do the child's carers who are, naturally, upset that the child has a serious problem.

Most professionals find dealing with children challenging and often stressful, but this can be reduced a little by realising that children are still people, but they are not just small people. There are some important differences that affect the way they are treated in an emergency by First Responders, but otherwise, they have the same bodily functions and needs as adults.

The Head

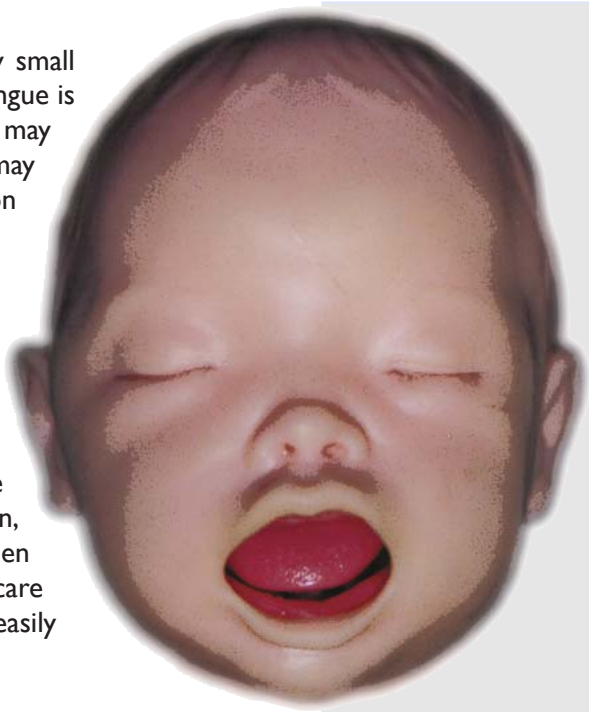
A child's head is larger in relation to body size than an adult and in babies and small children the back of the head stands out more from the body.

This means that the airway is more likely to be kinked when the small child is laid on their back for CPR or any airway protection as their head becomes tilted forwards. A baby or small child should have it's head and body in neutral alignment to keep a clear airway.

The solution is to place a folded blanket of an inch or two thickness (depending on the size of the child) under their shoulders to lift the body and allow the head to drop back more. It may be that this is sufficient to open the airway without significant head tilt or chin lift, but this should always be confirmed.

The Mouth

Compared with an adult, a child's mouth is relatively small and the tongue relatively large. This means that the tongue is more likely to block the airway. As the child's airway may become kinked by too much head tilt and the tongue may obstruct the airway with too little head tilt, the solution is to employ jaw thrust to keep the tongue clear. This is also useful where the child may have suffered a spinal injury, where head tilt should be kept to a minimum.



The child's tongue, being large, will more easily obstruct the view of the airway.

The soft tissue in a child's mouth is very easily damaged. Do not poke about in the mouth, and take special care in inserting an OP airway. In babies and small children, the OP airway should be inserted by using a small wooden spatula to move the tongue out of the way. Also, take care when lifting the chin as the floor of the mouth can be easily bruised and damaged if gripped too hard.

CPR

Up to the age of eight, child CPR is slightly different from adult CPR.

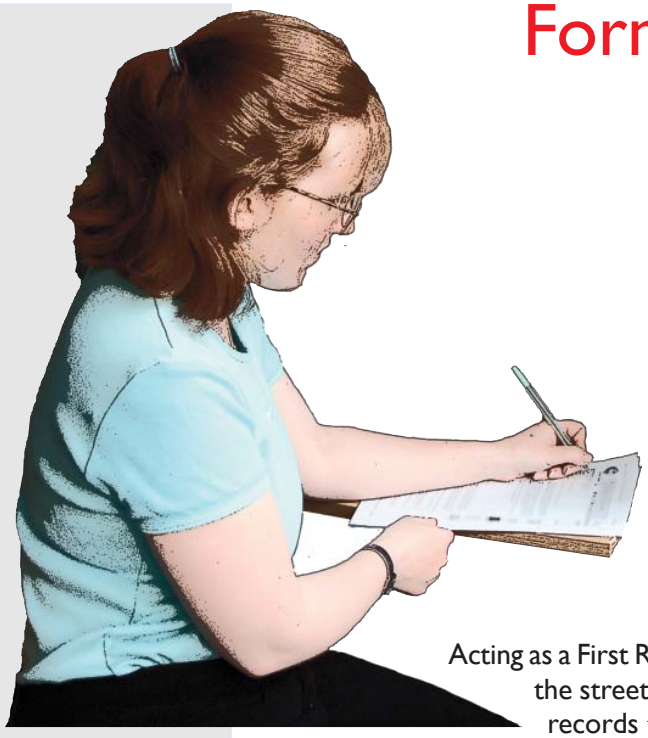
- In children, the ratio of chest compressions to rescue breaths is 30:2, as for an adult.
- The head tilt required to keep the airway open is less, and chin lift and jaw thrust are more important.
- The pressure of chest compressions for a child is significantly less than for an adult. In babies and small children, only use one or two fingers to compress the chest. In older children, only the heel of one hand may be required. In general, the chest needs to be compressed by one third of it's thickness and you should only apply the force necessary for that movement and no more.

Other than these points, CPR methods and timings for children up to eight years are the same as for an adult. Over the age of eight years, CPR is exactly the same for children and adults.

Section Five

Forms & documents

Forms and documents



Acting as a First Responder is different from just giving first aid on the street as a passer-by. The Ambulance Service require records to be kept for several reasons –

If it isn't written down, you didn't do it

- **Record keeping**

A proper written record needs to be kept in case of any questions that arise from the incident, such as the date and time a death occurred. Trying to remember the details of an incident that occurred many months before is fraught with problems. The saying is "if it isn't written down, you didn't do it."

- **Legal**

The patient or the patient's relatives may decide to sue somebody over the incident. The court will require written evidence which is clear, relevant, unambiguous and made at the time of the incident. Memory is unreliable.

- **Audit**

The Ambulance Service have to audit the response and treatment to ensure that everybody is carrying out laid-down procedures to provide prompt, effective treatment.

- **Research**

Treatment and procedures can only be regarded as effective if there is evidence of the outcome following many incidents. Many treatments may be effective only in special circumstances or may only be ineffective in special circumstances. The auditor did not attend the scene, so needs written records to check.

The following pages show several forms, but these are only suggested as typical of forms used by First Responder schemes. Your scheme will have its own forms, which should be used in preference.

You may wish to keep a record for yourself of the incidents that you attend, both for your personal records and to help with later training. This is perfectly acceptable, provided the information is anonymous, with no name, address or other details that could identify the patient. You may not discuss any specific incident or any specific treatment given to a patient with anybody except the proper authorities, such as the Ambulance Service or the Police.

Patient Report Form

First Responder Patient Report Form

Date	Scheme	Responders Name

1. Patient details
Name
Address

Age D.O.B. M / F

2. Response details
Call passed
Mobile
At scene
Ambulance arrival
Responder available
Ambulance call sign:

3. Incident details
Location
Time of collapse
History

4. Examination

	Arrival	4 mins	8 mins	12 mins
Responsive				
Unresponsive				

Airway Clear / obstructed / head tilt chin lift
Breathing yes/no **Rescue breathing** yes/no
Circulation yes/no **Chest compressions** yes/no

5. Choking
Backslaps yes/no
Abdo. thrusts yes/no
Effective yes/no

6. Unconscious
Recovery position yes/no

7. Chest Pain Known heart patient? yes/no GTN taken? yes/no

Pain score (circle)	0	1	2	3	4	5	6	7	8	9	10
onset	0	1	2	3	4	5	6	7	8	9	10
before treatment	0	1	2	3	4	5	6	7	8	9	10
after treatment	0	1	2	3	4	5	6	7	8	9	10

8. Cardiac Arrest
Witnessed yes/no CPR before arrival yes/no Effective yes/no
CPR performed by relative / bystander / doctor / other (specify) .....

Time	Shock advised YES	Shock advised NO	Number of shocks	Result Pulse	Result No pulse

9. Patient condition on arrival of ambulance
Breathing
Pulse
Unconscious
No breathing / pulse

10. Additional information
tick this box if any information is continued overleaf

OFFICE USE ONLY
Date received / / Collated / /
Signature Name

The Patient Report Form must be completed for all calls, regardless of whether the patient is taken to hospital or not. The form only needs to be completed where relevant to the patient, so if the call is to a patient suffering from chest pains, sections 5, 6 and 8 can be left blank.

Section 1 Complete as far as possible. It may be that you never discover the patients name, address and date of birth, so their sex and approximate age should be entered.

Section 2 This must be completed in full, and not estimated. It is part of the response standard records.

Section 3 Only record relevant details, which should be confined to this particular episode.

Section 4 This requires concentration during the call to remember to record events as they happen. This is not always possible with serious calls, such as a cardiac arrest.

Section 5 Complete only for choking patients

Section 6 Complete only for unconscious patients.

Section 7 Complete only for patients suffering from chest pains. Record their pain score, not your estimation. Remember that you cannot prescribe GTN, but may help the patient take it.

Section 8 In the case of cardiac arrest, complete all boxes as accurately as possible.

Section 9 This is not a reflection on your care of the patient, but merely a statement of fact.

Section 10 Use this space to record anything that is relevant to the call, such as the past medical history of the patient. Use the back of the form if the box becomes full, but remember to say that there is more information overleaf. Do not use separate pieces of paper.

Remember that the form is used for record keeping, legal, audit and research purposes, so it must be clear, legible and correct as far as possible. There is time to fill in the form neatly after the call, as a copy goes to the Scheme Coordinator, not the ambulance crew.

Personal Call Log

First Responder Personal Call Log Name

Date	Nature of Call	Notes

The Personal Call Log is used to record only brief details of the calls you attend. It is intended merely as a reminder for you so that you can ask questions or raise issues at the regular Team meetings that are held with the other First Responders. Urgent issues should be raised with the Scheme Coordinator (or the Control Manager out of hours).

Do not record any information that could identify a patient.

Reflective Journal

First Responder Reflective Journal	Name
Nature of Call	
What happened?	
What were you thinking and feeling?	
What was good about the experience?	
What was bad about the experience?	
What sense can you make of the situation?	
What else could you have done?	
If it arose again, what would you do?	

Not only do you have patients and relatives watching you work, but there are many distractions that make the provision of patient care somewhat stressful for novices. Because you have to process so much information you will find that you tend to concentrate on the skills you are performing, and consequently spend little time analysing your thoughts about the situation.

The journal will help you to assess your learning by focusing on the factors influencing your work, rather than simply a description of your actions. It should be a record of your development that analyses learning, through an examination of your knowledge, skills, attitudes, beliefs and values. Reflection can be defined as a "deliberate process of thinking about and interpreting experience in order to learn from it". This involves an analysis of both thoughts and actions, which results in changed behaviour or thinking.

At a simple level it could involve questions such as "did my history taking find out enough about Mrs Smith" and "if not, how could I have done it better". One reason for engaging in this reflection is to help determine whether you need to modify any aspect of your practice based on these experiences. Alternatively it could result in you concluding that you have performed to the best of your ability. Reflection is of most value if it results in an identification of a need for improvement.

The trigger for reflection could involve the realisation that your knowledge or experience was unable to explain what was happening in a particular incident, or some uncertainty about your role in a certain situation. While problems may be the centre for some reflection, positive experiences or achievements are also important to include in your journal as a record of your progress towards clinical competence.

The completion of the Reflective Journal is entirely a personal choice, but it may help you to feel less unsure in future situations.

Training Record

First Responder Training Record Name

Date	Type of training	Notes

To operate as a First Responder, you will need to pass a practical assessment at the end of the training course.

In addition to this, you will need to attend regular refresher sessions and re-qualifying sessions to ensure that your skills and knowledge have been retained and also to update you in any changed practices. These sessions act not only as an excellent opportunity to get together with your fellow First Responders to share experiences and ask questions, but also to socialise.

This training record is for you keep a record of the training that you have undertaken and also make a note of upcoming training sessions, any questions you wish to raise and any areas that require particular reinforcement.

Your Scheme Coordinator will also keep records of your training to ensure that you are never practising without a valid certificate.