First Aid for First Responders in Africa

Evidence-based by CEBaP

Belgian Red Cross

helps people help

Contents

Introduction

When First Aiders become First Responders …

Since the first evidence-based African First Aid guidelines of 2010, many Red Cross/Red Crescent volunteers and the general population in several countries in Africa have been trained in basic First Aid using the 'Basic First Aid for Africa' manual. These people all became First Aiders and are able to give emergency care at any time, both at home and at work. The 'Basic First Aid for Africa' provides all the vital First Aid knowledge required to act as a First Aider in daily life without having prior knowledge of First Aid. Besides the most up-to-date basic First Aid knowledge and techniques, it also includes prevention recommendations for most topics.

This publication is a follow-up to the 'Basic First Aid for Africa' manual, ready to be used for volunteers who want to do even more. First Responders can be mobilized for extraordinary events, both man-made calamities (road accidents, political unrest, conflict etc.) and natural disasters. The advanced First Aid knowledge and skills in this manual put First Aid in a broader context of pre-hospital care in the event of emergencies and disasters in Africa, especially when First Aid providers encounter situations with multiple casualties with several injuries. These advanced knowledge and skills can as well be put to action in assisting people in need in our communities.

The First Aid guidelines in this manual have been developed according to the evidence-based practice methodology. Scientific literature forms the basis for the evidence and is further complemented with practical experience, the expertise of specialists and the preferences and available resources of the target group. If you are interested in knowing more about this process, you should definitely read the section dealing with methodology at the back of this book.

However, this manual is not a substitute to First Aid training. The Red Cross/Red Crescent offers affordable First Aid training courses. For more information contact your nearest Red Cross/Red Crescent office.

After receiving a First Responder training, volunteers can be deployed in Red Cross/Red Crescent action teams, ready to provide help to those in need.

Acronyms Used in this Manual

AED	Automated External Defibrillator
AVPU	Alert, Voice Command, Pain, Unresponsive
BPM	Breaths/Beats per Minute
CPR	Cardio-pulmonary Resuscitation
CVA	Cerebrovascular Accident (a stroke)
DPI	Dry Powder Injector (a type of asthma inhaler)
EMS	Emergency Medical Service
LoC	Level of Consciousness
MOI	Mechanism of Injury
PPE	Personal Protective Equipment
pMDI	Pressurised Metered-Dose Inhaler (a common type of asthma inhaler)
SpO_2	Oxygen saturation (blood)
VHF	Viral Haemorrhagic Fever

Note to the reader

Transport to medical care:

In this manual, this term is used to refer to transporting an ill or injured person to a facility where they will receive definitive medical care for their condition. In optimal circumstances, this would be undertaken by an appropriately equipped ambulance. In practice however, it is recognised that the mode of transport will be determined by resources, training and other situation-dependent factors.


South Sudan
Red Cross

1 The Role of the First Responder

For the purpose of this manual, First Responders are members of the community with advanced First Aid skills and knowledge. Being a First Responder is a role that carries with it the responsibility to care for the ill and injured with integrity and professionalism. Your specific skills will vary depending on the training that you receive, as well as the other resources that are available within your community (e.g. the location of the nearest hospital).

Examples of the First Responder's role include:

- Providing First Aid to those in need
- Assisting in the response to a disaster (e.g. flooding or earthquake)
- Helping to promote health and safety in the community
- Transporting the ill or injured to a medical centre or hospital
- Communicating with medical professionals such as doctors and ambulance crews
- Recording information about ill or injured people

The limits of the First Responder's Role

As a First Responder, you will have advanced First Aid skills as well as knowledge about such things as incident management and disaster response. However, it is important to recognise the limits of what you can do. Always follow the guidance that you have been given during your training and the information that is included in this manual. This information is based upon scientific evidence and you should avoid the temptation to use alternative ways of caring for the ill or injured if they are not based upon accepted medical practices.

Becoming a First Responder

The role of the First Responder is an important one that requires many qualities besides First Aid skills.

- Training and practice
  - Skilled in basic and advanced First Aid
  - Skilled in incident management
  - Skilled in communication

- Integrity and sensitivity
  - Able to keep information private and respect the confidentiality and rights of others
  - Honest and respectful
- Motivated
  - Prepared to continue learning and improving
  - Willing to help people in need
- Organised
  - Ready to help when needed
  - Properly equipped
- Disciplined
  - Use skills and knowledge appropriately
- Dedicated
  - Prepared to give time
  - Reliable

1.1 Taking Care of Yourself

During your work you may have to deal with a variety of challenging situations, such as an injured person in extreme pain, the elderly and confused or the family of someone who has recently died. You may also see injuries that are unpleasant to look at and experience things that are outside of everyday experiences, such as seeing someone die as the result of an accident.

These unusual experiences affect people in many ways and it is important that you look after yourself and get help if they cause you to be upset. A First Responder is someone who tries to help others and you should not have to suffer as a result of doing this.

After attending a difficult incident or situation, it is not unusual to re-play what happened in your head, have memories of what you saw and wonder if you did as well as you could have. This is quite normal if it happens soon after an incident, maybe for a few days afterwards. This is how your mind tries to make sense and adjust to an unusual and perhaps upsetting experience.

However, if these symptoms continue for more than a few days, they can begin to affect you in other ways and you need to get some help so that you can move on from the incident and prevent the experience from interfering with your life.

Some of the signs that you need help include the following:

- Becoming irritable
- Being easily startled
- Having intrusive memories (flashbacks)

- Withdrawal from colleagues, friends and loved ones
- Emotionally withdrawn or empty
- Eating and sleeping more or less than is normal
- Excessive use of alcohol or drugs

Feelings of distress among First Responders are more common than most people realise. This does not mean that you are less able to cope than anyone else, but it does mean that it is time to get help by talking to the right person.

You might try talking to:

- A close friend or member of your family
- A member of your community who you think will understand
- A doctor or nurse who you work with
- Another First Responder
- A person who is trained to help people affected by stressful experiences

Remember that whoever you speak to, they must be trustworthy, keep what you tell them to themselves and not share it with others. You should also be careful to protect the privacy of anyone involved in the incident by not telling others who they were or what was wrong with them.

1.2 Caring for the Ill or Injured

A calm and confident approach is needed when caring for the ill or injured. This is because a person suffering from an illness or injury often feels vulnerable, confused or distressed. A reassuring approach from the First Responder will help to reassure the person that they are going to be cared for.

You have a duty to look after the ill and injured person as a whole. This means recognising the person's psychological and social needs as well as their physical ones.

You can help to reassure a person by doing the following:

- Talk to them calmly
- Show them respect
- Avoid making any judgments about the person or their problems
- Ask if they have family or a friend they would like to talk to
- Make them as comfortable as possible
- Tell them what you are doing and why
- Discuss any options with them and involve them in decisions when possible

Note: mental reactions to physical illness are not the same as those caused by mental health problems (e.g. depression or self-harming behaviour). These types of problems are considered in chapter 9.

1.3 The Local Context

The expectations of and the equipment available to First Responders will differ from country to country and across different regions. The training you receive should reflect the role and resources that you have within your own healthcare system.

It is important that you are familiar with your own equipment and understand when it is to be used. You may also need to know about equipment that is used by the emergency medical services in case you are asked to assist in using it (e.g. the type of stretcher carried by an ambulance).

Sometimes you may need to improvise by, for example, using clothing or other fabrics to make an ill or injured person comfortable. These skills should also be practised.

1.4 The Limits of First Aid

Providing First Aid care to an ill or injured person is a valuable skill that has the potential to make a positive difference to a person's life. However, it is important to recognise that no matter how skilled you are the outcome for the affected person may be beyond your control.

- Preceding factors, such as poverty or pre-existing illnesses, may cause a person to be more vulnerable and less able to cope with the impact of an illness or injury
- First Aid normally takes place away from a hospital and without all the support of advanced medical practitioners and equipment
- In some areas, there may be only very limited emergency medical services (e.g. ambulances and mobile doctors) and so the time taken to provide advance medical care can be delayed

For these reasons, it is important to recognise the limits of what you can do for a person, no matter how seriously ill or injured they are. If you have provided care according to your ability and knowledge, then you will have done the right thing and should not feel responsible if the outcome for the affected person is poor.

1.5 6 Principles of First Aid

Whether you are a basic First Aider or a professional medic, some things remain constant when responding to a First Aid situation. These principles describe the priorities and limits of our actions and should be remembered at all times.

6 principles of First Aid

When administering First Aid, you must take these 6 principles into consideration.

- **Keep calm during an emergency situation**
  - Try to bring your emotions under control before you act
  - Only proceed when you have regained your calm

- **Avoid infection**
  - If possible, wash your hands with water and soap before and after administering First Aid (see page 19-20)
  - After washing your hands, put on gloves or alternatively plastic bags
- **Act as a First Aider**
  - Make sure you do not make the situation worse
  - Only give medication if clearly recommended and if legislation in your country allow first responders to give medication
  - For more information contact your local Red Cross/Red Crescent organization
- **Ensure the comfort of the ill or injured person**
  - Protect the ill or injured person against cold and heat, but do not give food or drinks except in a few specific conditions (e.g. shock, hyperthermia and hypoglycaemia) which are discussed in this book
- **Give psychosocial First Aid**
  - Try to make the ill or injured person feel better
  - Listen to him, talk quietly, explain what you are doing and touch him gently
- **Emotional reactions might occur afterwards**
  - Talk to family, friends, fellow First Aiders or a community leader
  - If you are still worried, talk to a professional and seek counselling

2 Approaching a Seriously Ill or Injured Person

When you attend an incident or help someone who is seriously ill, it is important to follow a step-by-step procedure. This will ensure that you do not miss anything important and that you remember what to do even in a difficult situation.

2.1 The 'D.R.A.B.C.D.E.' Procedure

D.R.A.B.C.D.E. (pronounced 'Doctor ABCDE') is a procedure that will help you to remember the order in which you must proceed.

D – Check for **Danger**
Make the area safe/Protect yourself

▼

R - Check for **Response/Consciousness**
and shout for help

▼

A - Open the **Airway**

▼

B - Check for **Breathing**

▼

C – **Circulation**: Check for serious bleeds

▼

D - Check for any other **Damage** (injury) or **Disability**

▼

E - Expose and Examine more closely

Note: The exception to this procedure is when there is an immediately life-threatening or 'catastrophic' bleed – see page 68.

The steps in the **D.R.A.B.C.D.E.** procedure are described in more detail on the following pages.

D - Check for Danger

The D.R.A.B.C.D.E. procedure begins with your own safety. As a First Responder, your first duty is to ensure your own safety. If you are injured while trying to help someone, you will have made the situation worse rather than better.

There are two things to do when you go to help someone:

1. Make sure the area is safe
2. Protect yourself from infection

Make the area safe

When arriving at the scene of an incident:

- Take time to compose yourself
- Understand the situation and look for dangers
  - E.g. live electric cables
  - E.g. dangerous dogs
  - E.g. angry or aggressive people
  - E.g. danger of fire
- Take any necessary steps needed to ensure your safety
  - E.g. turn off electric power
  - E.g. ask the owner to control their dog
  - E.g. ask people to calm down/wait for people to calm down
  - E.g. ensure nobody is smoking/extinguish any fires
- Ensure the safety of others at the scene

Protect yourself from infection

You will not know if an ill or injured person has an infectious disease. Therefore, it is important that you take precautions to avoid coming into contact with blood and other body fluids.

- You can reduce the risk of infection by following these procedures at all times:
  - Ensure that your hands are properly washed before and after contact with an ill or injured person
  - Wear gloves and, if necessary, other protection such as glasses, a face shield and overalls
  - If gloves are not available, clean plastic bags may be worn over the hands instead
  - Tie back any long hair
  - Keep finger nails short
  - Cover any broken skin (e.g. cuts, grazes, sores) with a suitable dressing

- Avoid wiping your face with your hands, even if you are hot
  - Use a clean paper towel instead
- Be aware of what is around you and if possible:
  - Avoid standing or kneeling in body fluids
  - Avoid getting clothing contaminated
- Ensure that you follow medical advice concerning immunisation for diseases such as Tetanus and Hepatitis B
- Wear any protective clothing that you have been provided with, e.g. hearing protection, safety shoes and high visibility jackets

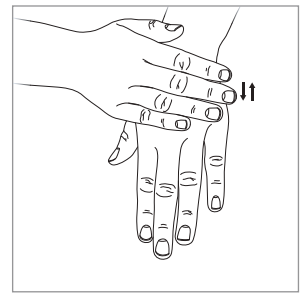
Handwashing

Remember to wash your hands, both before and after helping an ill or injured person. This is important to prevent infection – both for you and for the person you are treating. Even if you are putting on disposable gloves, you should still wash your hands before doing so.

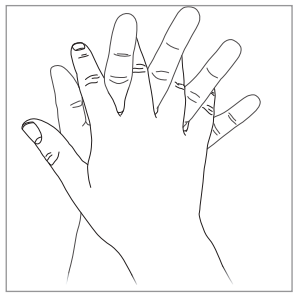
- Soap and water is best for handwashing
  - Use clean, running water
  - Wet your hands before applying the soap
  - Rub your hands together to make soap bubbles/foam
- Clean all parts of the hands, including:
  - Between the fingers
  - Under the fingernails
  - The front and back of the hands
- Rinse the soap off with clean water
- Dry your hands with a paper towel or clean cloth

1. Wet your hands and put some soap on them. Rub the palms of your hands together

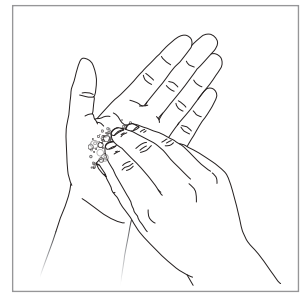
2. Rub the back of each hand



3. Wash between the fingers



4. Wash around fingers and thumbs – remember to clean the finger tips

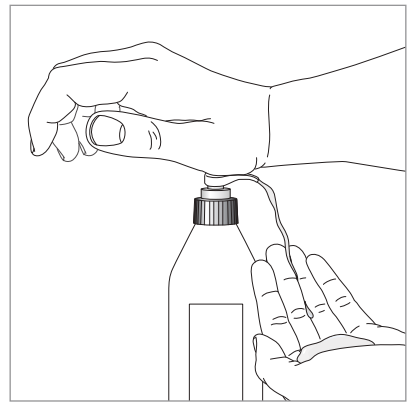


Other ways to wash your hands

Sometimes, soap and clean water can be hard to find and it is helpful to have other ways of cleaning the hands, for example:

- Rubbing your hands with cold ash from a clean wood fire to remove germs and then rinsing the ash away with clean water may be practical if soap is not available
- You may choose to carry a small bottle of hand sanitiser if there is no water. These are liquids that help to reduce the number of germs on your skin

Hand sanitiser



R - Check for Responsiveness/Consciousness

A person's level of consciousness is important. It may indicate a head injury, shock or a serious illness.

What do you see:

A conscious person is:

- Awake and aware of the world around them. They understand:
  - Who they are
  - Where they are
  - The time of day
  - What is happening

An ill or injured person's condition may cause changes in their level of consciousness and this is often the first sign of a serious problem.

A person who is not fully conscious may be:

- Confused
- Not making sense
- Not moving or talking at all

What should you do:

When you begin to examine the person, you only need to find out if they are conscious or unconscious. The 'shout & tap' action is all that is needed to do this.

- Shout out their name or ask *"Hello, can you hear me/wake up?"* in a clear voice
- At the same time as shouting, tap the person's shoulders
- If the person is conscious, they will respond, perhaps by opening their eyes or talking to you

Checking for a response

If the person is not fully conscious, there is a chance of a serious problem. If you are on your own and there is nobody around to help:

- It is time to shout out loudly for *"help!"*
- Do not leave the person yet, they may need urgent treatment before you go for assistance

Note: After the primary survey (Airway, Breathing and Circulation - ABC) is complete and any problems have been dealt with (e.g. serious bleeds have been stopped), you may assess consciousness further (see page 35, the AVPU scale).

A - Open the Airway

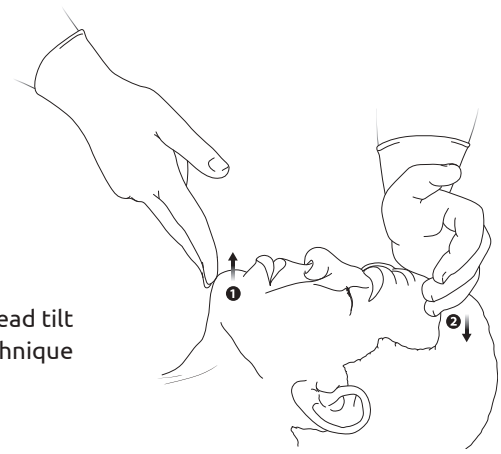
It is very important that the ill or injured person can breathe. If anything is blocking the airway they will not be able to breathe and will die if not assisted.

- If the ill or injured person is **conscious and talking**:
  - They are able to keep their own airway open
    - Ask them to spit out anything in their mouth while you look after them, in case they start to choke or become unconscious
- If the ill or injured person is **unconscious**:
  - You must open their airway
  - Use either the head tilt/chin lift or jaw thrust method to open the airway
  - If the unconscious person has fluid in their mouth, you will need to put them on their side in a recovery position, so that the fluid can drain out

What should you do:

Head tilt/Chin lift

- Place one hand on the person's forehead
- Place two fingers from your other hand on the end of their chin
- Carefully tilt the head back while at the same time pushing the chin upwards



Open the airway: Head tilt and chin lift technique

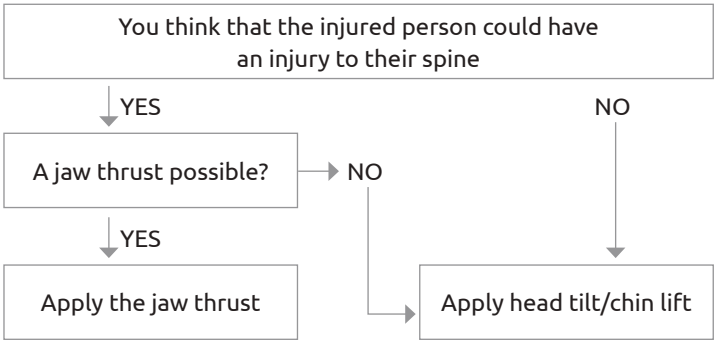
Jaw Thrust

The jaw thrust is an alternative method for opening an airway and may be used if there is a risk that the person has injured their spine. This is done by pushing the lower jaw forwards from the back of the jaw. A facial injury may mean that this is not possible, in which case a head tilt/chin lift is used.

- Sit at the head of the unconscious person
- Place your thumbs on their cheek bones
- Hold the lower jaw with both hands. Put your index fingers on the chin
- Use your fingers to move the lower jaw forward/up
- Continue to apply the jaw thrust and use the palm of your hands to keep the person's head still

Opening the airway:
Jaw thrust technique

When to use a head tilt/chin lift or a jaw thrust?



B - Check for Breathing

Once you are sure that a person can breathe because their airway is open, you need to check that they are breathing.

What should you do:

- If a person is conscious and talking comfortably:
  - It is safe to assume that they are breathing adequately
- If the person is unconscious:
  - Continue to apply the head tilt and chin lift
  - Place your ear close to the person's mouth (4-5cm away from their lips) and look towards their chest/abdomen
  - Look for signs of breathing
    - Can you see the chest or abdomen rising and falling as they breathe?
  - Listen for signs of breathing
    - Can you hear the breathing?
  - Feel for signs of breathing
    - Can you feel the breath on your face?
- **Look, listen** and **feel** for two good breaths:
  - Give them up to 10 seconds to do this
  - If, after 10 seconds, they have not given two good breaths you must provide basic life support (see chapter 4)

Look, listen & feel for breathing

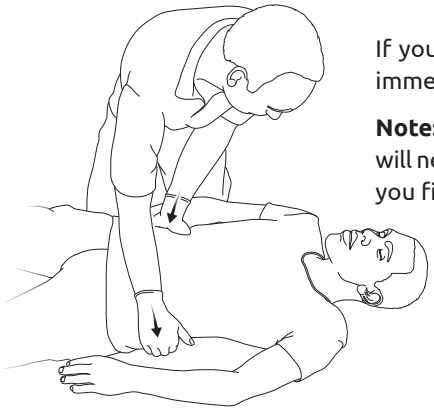
C – Circulation: Check for serious bleeds

At this stage, you are just checking for serious bleeds, which are big bleeds that need to be treated soon. Minor wounds and scratches can be treated later.

What should you do:

- Look on and around the injured person
  - Is there any sign of blood on their clothing or on the floor beside them?
- Feel the clothing
  - Lift loose clothing gently from the body. Is it sticky or damp?
- Place your hands carefully under the body
  - Behind the neck and shoulders
  - Under the abdomen
  - Under the knees
  - Check your gloves for signs of blood

Check for bleeds



If you do find a serious bleed, you should treat it immediately – see chapter 6.

Note: If the person is wearing a lot of clothing, you will need to look inside the clothes to make sure that you find any signs of serious bleeding.

D - Check for any other Damage or Disability

E - Expose and Examine More Closely

After ABC (Airway, Breathing & Circulation) is complete, you should do a head-to-toe examination of the person to see if there are any other problems **(D-Damage/Disability)** or if anything has been missed.

The examination involves both looking and feeling. It may be necessary to remove some of the injured person's clothing **(E-Expose and Examine)**. The dignity of the person is very important, but feeling embarrassed or awkward is not a reason for failing to give proper care.

- Look for signs of injury
  - When touching the ill or injured person, place your hands gently at first before applying more pressure and stop if the person shows any sign of discomfort
  - Compare one side of the body with the other to see if there is any deformity
- It is important to continue to check the person's breathing while doing the head-to-toe examination and to take action if it is anything other than normal
  - Remember: 'Look, listen and feel' for breathing

What should you do:

To examine someone thoroughly, start at the head and work down the body as follows:

- **Head**
  - Feel gently around the skull
    - Are there any soft spots or bruises?
    - Is there any blood?
  - Check in the ears for bleeding
  - Check behind the ears for signs of bruising
  - If an injury to the head is found or suspected:
    - Do not press on it
    - If possible, immobilise the head while the rest of the examination is completed
    - The person needs urgent medical care
- **Face**
  - Look at the person's face
    - Is anything deformed?
    - Is the nose crooked?
    - Is a cheekbone sunken?
    - Is the lower jaw out of shape?
  - Gently open the person's eyes
    - Do they react to light?
    - Are both pupils the same size?
  - Is there any bleeding from the nose?
    - Is the blood very sticky?
  - Gently feel the face for any instability in its structure
    - Use fingers along the forehead and cheekbones

- **Neck**
  - Be careful not to move the person's head while examining the neck
  - Loosen any tightfitting clothing such as ties or other items around the neck
    - Is there any sign of damage to the throat?
    - Is the windpipe (trachea) sitting centrally on the throat?
    - Are the blood vessels on the neck swollen or raised?
  - Gently feel the back of the neck
    - Is there anything unusual?
    - Is the person wearing any medical information on a necklace?
- **Shoulders**
  - Place a hand on the outside of each shoulder
    - Does everything feel intact?
    - Are they identical in shape and temperature?
  - Press gently on the shoulders
    - Is the resistance identical on each side?
    - Does everything feel normal?
  - Feel along the person's collarbones
    - Are they symmetrical and stable?
    - Is there any unusual stepping?
- **Chest**
  - Look for signs of the chest heaving or see-sawing, the rib muscles working hard
  - Put a hand on either side of the rib cage
    - Feel for smooth and equal breathing between the two sides
    - Feel for indentations or segments of rib(s) that are out of normal alignment
- **Abdomen**
  - Expose the abdomen
    - Look for sign of bruising, bleeding or intestines protruding from a wound
  - If the abdomen appears normal
    - Use the flat of the hand to press on each quarter of the abdomen
    - Feel for signs of tension in any quarter
- **Pelvis**
  - Warning: Pelvic injuries can be very unstable and moving the person or manipulating their pelvis can lead to major internal bleeding

- Do a visual check to see if the pelvis looks normal
  - Do the hip bones look the same shape; are they at the same level?
  - Is a thigh turned out an unusually long way compared to the other?
  - Has the person wet themselves (urinated)?

- **Thighs**
  - Look and feel both thighs
    - Is one larger than the other, more swollen?
  - Check each thigh individually
    - Is there any sign of damage or open wounds?
    - Is there blood coming through the clothing?
    - Is the thigh bone projecting through the skin?

- **Lower leg**
  - Compare one leg with the other
    - Are they the same size, shape, colour, temperature?
  - Injuries to the lower leg and arms are usually not life threatening

- **Feet**
  - If the feet are not obviously injured, it may not be necessary to remove the person's shoes
  - Feel for warmth around the ankle to ensure there is still circulation
  - Check the pulse at the ankle if there is any significant leg injury

- **Arms**
  - Look at and feel the arms in the same way as the lower legs
    - Is either arm damaged?
    - Is there any sign of bleeding?
  - Check the wrist for identification or medical bracelets
  - Check the circulation in the fingertips
  - Check the wrist pulse if there is damage to the arm

Completing a head-to-toe examination takes time and it is better to do it properly than go too quickly and miss something.

Examining an ill or injured person by feel ('palpation')

- Press firmly enough to find any signs of instability, softness or misalignment …
  - … but not so hard that the person is caused unnecessary pain
- Apply the hands gently at first and gradually increase the pressure
- Only through proper training can the First Responder learn to examine a person effectively and appropriately

2.2 When to Contact the Emergency Services

The time to contact the emergency services will depend upon what you find when you arrive at an incident or assess an ill or injured person.

Before contacting the emergency services you should try and manage immediately life threatening problems such as opening the airway, managing a catastrophic bleed or responding to a choking incident. This means that, if possible, you should complete D(C) RABC before calling – but also see page 50 if you need to perform CPR on an ill or injured person. However, if there are a lot of casualties, you may want to call for help immediately.

While caring for a seriously ill or injured person, you might be able to use the 'speaker' option on the phone and talk to the emergency services at the same time. If there are other people nearby, you might ask them to call the emergency services while you take care of the ill or injured person. If you do ask someone to do this, make sure that they know the emergency phone number to call and what to say.

- The reason for the emergency
  - E.g. the person is struggling to breath
  - E.g. the person is unconscious
- The location
  - Where the ambulance must come to
- That a First Responder has asked them to call

Also, if someone else makes the call, ensure that they tell you when they have done it.

After the emergency services have been called, it is still important to complete all of the D(C)RABCDE checks, if this has not already been done, and to monitor the ill or injured person until help arrives.

2.3 The Recovery Position

If you are caring for an unconscious person it is important to ensure that they are able to breathe adequately.

The risk for an unconscious person is much greater if they are lying on their back as liquids will collect in the throat and the tongue can fall to the back of the mouth and block the airway. For this reason, you should place the unconscious person on their side in a 'recovery position'. Refer to your basic training for more information on the recovery position.

Remember, the recovery position is 'S.O.D.A.'.

- **Stable**
  - The person should remain in that position naturally
- **Open**
  - The airway should be accessible and open

- **Draining**
  - Fluids in the mouth or regurgitated by the person should drain out of the mouth and NOT stay in the throat or mouth
- **Airway**
  - If you have provided a **S**table, **O**pen, **D**raining **A**irway, you have helped the unconscious person to breathe

If you suspect spinal injury

If you suspect the person has a spinal injury then you may decide to leave the injured person on their back, but only if they are breathing normally and medical help will arrive soon. In this situation, a 'jaw thrust' can be used to keep the airway open and stabilise the head (see page 23).

However, even in these cases, if help is delayed or the person shows signs of not breathing easily and smoothly, you must put them in the recovery position. If help is available, use a log roll to do this (also see page 59 for information on passive vomiting).

2.4 How to Dispose of Medical Waste

After helping an ill or injured person, materials that have become dirty with blood or other body fluids must be safely disposed of or cleaned.

- If you are unsure as to how to clean up and dispose of materials, ask for advice from your supervisor or team leader. Do NOT put yourself at risk of infection
- When handling waste materials and cleaning up after an incident, always wear gloves and look out for sharp objects
- Never re-use materials, such as gloves and dressings that are intended to be used only once

Disposable items

Gloves and other soft materials used to treat people (e.g. bandages and dressings) must always be disposed of safely and not left where they might cause harm to others.

- Ask a medic or ambulance crew to take the items away for disposal
- It is often better to sweep items onto a shovel or board rather than handle them directly
- Have a supply of clinical waste bags for collecting materials ready for disposal
- Put your gloves in the waste bag after everything else has been disposed of
- If your clothing has been contaminated, wash it separately from other items at a high temperature along with some disinfectant

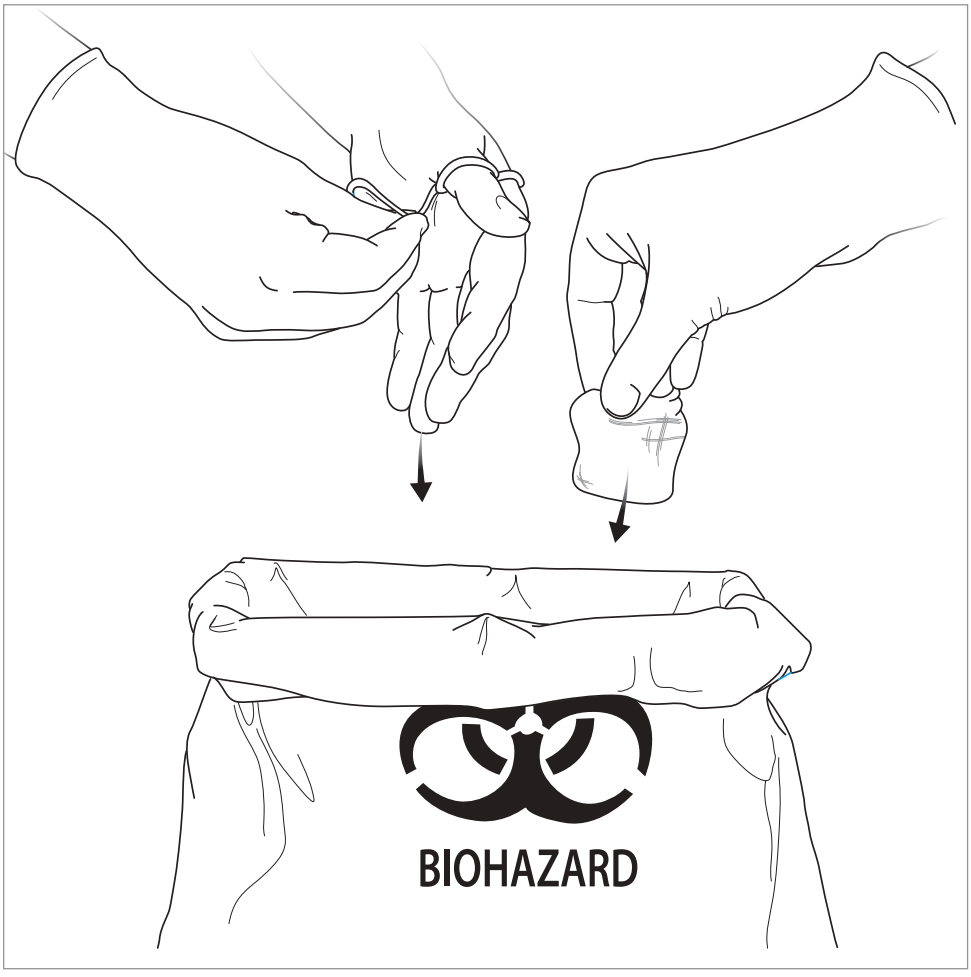
Re-useable items

Some equipment may be re-usable (e.g. scissors), but it must first be properly cleaned and disinfected. Ask for advice from your supervisor or team leader about how this can be done.

Cleaning the surrounding area

If part of a building, vehicle or the ground outside has been contaminated with body fluids (e.g. blood), this must be cleaned using a disinfectant recommended by your local medical service, such as a dilute solution of bleach. Remember to protect yourself with gloves, aprons and a mask, while cleaning up.

Dispose of contaminated waste



3 Gathering Information about an Illness or Injury

3.1 Communicating with the Ill and Injured

Talking and listening are very important skills for finding out what is wrong and for reassuring and calming the ill or injured person. However, the person may be confused and struggle to understand what you are saying to them, so it is important to keep communication simple and straightforward.

- Speak clearly and slowly
- Tell them who you are
- Use short, positive sentences
- Ask the person what they have understood
- Rephrase and repeat things that have not been understood
- Be careful what you say – do not make them more worried
- Ask permission to examine and care for them
  - Tell them what you are going to do, e.g. *"You're going to feel my hands on your shoulders, let me know if it is uncomfortable"*
- Avoid making any judgements about the ill or injured person

Show the ill or injured person respect. Use their name if it seems appropriate or a respectful term. Remember, the person may be frightened or even angry due to the pain they are in or their medical condition.

Obtaining Consent

Where possible, you should always ask the ill or injured for permission to examine or treat them. If they cannot give permission, it may be acceptable to ask a relative.

If there is a life-threatening illness or injury, it is acceptable to provide care even if the person is unable to give consent (for example, because they are unconscious or suffering a cardiac arrest).

The Angry or Aggressive Person

Sometimes an ill or injured person or those close to them such as family and friends, may be angry about the situation. This may be due to distress, worry or embarrassment about what has happened or other concerns that are not immediately clear.

If a person appears angry or aggressive, ensure that you are **safe** and do not hesitate to call for help or stay away until things calm down. If you decide to talk to the person, consider the following:

- Ask an appropriate friend or relative to help reassure the angry person
- Ask the person to tell you what has happened
- Explain that you are going to help
- Use positive language
  - E.g. let me see what we can do to help
- Give an angry person more personal space than normal
  - Do NOT get too close to them

Talking to an Unconscious Person

Even if you think that a person cannot hear you, it is very important to keep talking. Hearing is the last sense to be lost as people become more deeply unconscious. Talk to them as you would to a conscious person. Tell them who you are and what you are doing to help them.

3.2 Signs and Symptoms

There are two types of information that you can get from an ill or injured person. These are known as “signs and symptoms”.

- Signs
  - The things we can physically see and measure, directly or indirectly, e.g. temperature, pulse, breathing rate
- Symptoms
  - What a person can tell us about their condition, e.g. how they are feeling, which part of the body is hurting, when the discomfort began

The Vital Signs

Vital signs are physical indications of a person’s health. Vital signs provide important information that can help you to understand what is wrong with an ill or injured person as you can compare the signs with those expected in a healthy, ‘normal’ person.

Try to begin making a note of a person’s vital signs as soon as the airway, breathing and circulation (bleeding) priorities have been taken care of.

The following vital signs can all be assessed without the need for any equipment:

- Level of consciousness
- Breathing
- Heart rate/pulse
- Pupil size and reaction
- Colour
- Temperature and moisture of the skin
  - By touching the person

Examples of other signs that may be recorded by those who have access to the appropriate equipment and are properly trained include:

- Temperature
- Oxygen saturation (the amount of oxygen in the blood)
- Blood glucose level (the amount of sugar in the blood)

See appendix III for information on how to use the equipments to measure these signs.

How to measure the vital signs?

Level of consciousness

A conscious person is **awake** and **aware** of the world around them. They understand where they are, what is happening and who they are.

This is an important vital sign to measure as illness or injury can affect the brain and therefore a person's level of consciousness (**LoC**).

What do you see:

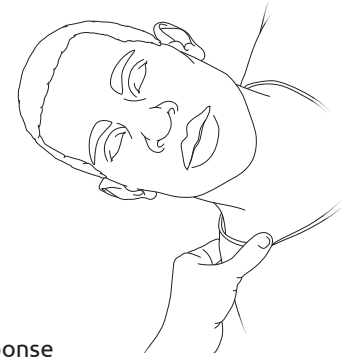
You can determine the level of consciousness using the AVPU scale.

- **A - Alert**
  - The person is awake and aware of what is happening around them
- **V - Voice**
  - The person responds to a command (e.g. *"Open your eyes!"*) or gentle touch but does not talk spontaneously
- **P - Pain**
  - The person only responds to a painful stimulus such as a squeeze of the shoulder
- **U - Unresponsive**
  - The person does not respond at all

What should you do:

Check the following until you have a clear response:

- **Alert**
  - Ask the person:
    - What is your name?
    - Where are you?
    - What time of day is it?
    - Do you know what has happened?
- **Voice**
  - Tell the person loudly and clearly:
    - "Open your eyes if you can hear me"
    - "Open your eyes if you can feel me touching your shoulder"
  - Do they respond?
- **Pain**
  - Firmly squeeze the person's shoulder muscle, as shown in the picture below. Also, observe how they respond as you examine them.
    - Do they make a noise or move away from the pain?



Checking for a 'pain' response

- **Unresponsive**
  - There is no response
    - If the person is not alert and does not react to your voice or to pain, they are 'unresponsive'

Recording Levels of Consciousness

- Write down the level of consciousness (LoC). For example:
  - 'LoC = Alert but confused'
  - 'LoC = Voice response'
  - 'LoC = Pain response only'
  - 'LoC = Unresponsive'
- Level of consciousness should be measured and recorded regularly.

Breathing

Breathing is a vital sign with three parts:

- Rate
  - The speed of breathing
- Rhythm
  - The smoothness of the breathing
- Character
  - The sounds and effort

To check breathing use the 'look, listen and feel' technique, see page 24.

- Normal breathing for a person at rest will typically show the following:
  - Rate
    - 12-20 breaths per minute
  - Rhythm
    - Smooth and regular
    - Left and right sides of the chest are moving together
  - Character
    - Quiet and easy
- Breathing problems may show a variety of changes from normal
  - Rate
    - Fast or slow
  - Rhythm
    - Irregular, uneven
  - Character
    - Hard work
    - Noisy
    - Wheezing
    - Gurgling
    - Painful

A person's breathing rate can change for many reasons, e.g. exercise, feelings of distress, pain, chest injury, illness. Fast, shallow breathing is one sign of shock; laboured breathing may follow a heart attack or an asthma attack.

Heart rate/pulse

The pulse is an indication of heart function. Each beat of the pulse is a beat of the heart. A strong, regular pulse between 60 and 100 beats per minute is normal.

It can be useful to compare the pulse on either the arms or the legs if there is an injury that might be affecting the circulation in a limb.

If the person is breathing, they also have a pulse. Measuring the pulse takes time and should be left until after any life-saving First Aid (ABC) has been given to the ill or injured person.

Pulse/heart rate & rhythm

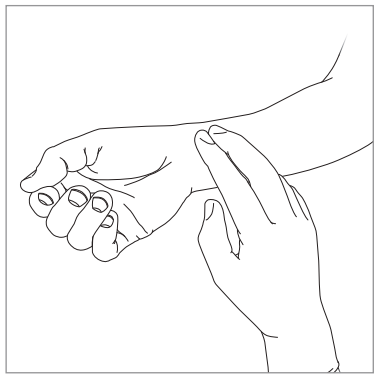
- Normal
  - 60-100 beats per minute
  - Regular
  - Strong
- Abnormal
  - Slow/fast
  - Irregular
  - Weak/thin
  - Excessively strong/bounding

How to take a pulse?

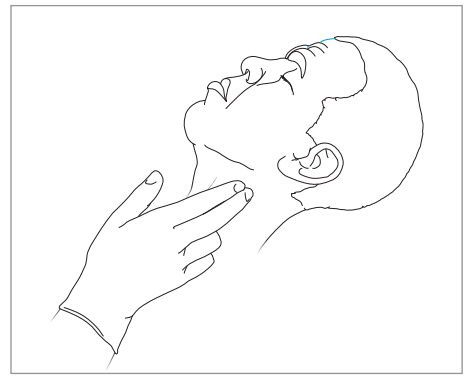
The pulse can be taken at various points on the body. The most common sites are at the wrist (radial pulse) and in the neck (carotid pulse).

- Use your fingers, not your thumb, to feel for the pulse
- If you cannot feel a pulse, adjust the pressure you are using – firmer or lighter
- Take the pulse for 30 seconds and then double the number to get beats per minute
- Record the pulse rate, its strength (strong, weak) and rhythm (regular, irregular)

Where to Take a Pulse?



- Wrist (radial) pulse
  - The radial pulse is located:
    - On the inside of the wrist
    - Towards the thumb side
    - In the soft area just above two tendons



- Neck (carotid) pulse
  - The neck pulse is located:
    - Behind and slightly below the angle (back) of the jaw bone
    - To the side of the windpipe
    - Only check on one side of the neck at a time

Note: If available, the pulse can also be measured using a pulse oximeter – see appendix III.

Pupil size and reaction

Changes to normal pupil size and reaction can be important signs of head injury. You should check the person's pupils.

What do you see

- The pupils are normally a similar size and react to light by getting smaller
  - The shape of pupil is NOT a reliable sign

What should you do

- Pupil reaction can be assessed as follows:
  - In sunlight
    - Shield the eyes with your hand for a moments and then check the response to light
  - In dim light
    - Shine a light briefly in each eye to see if the pupils get smaller
- Check pupil size by comparing one with the other

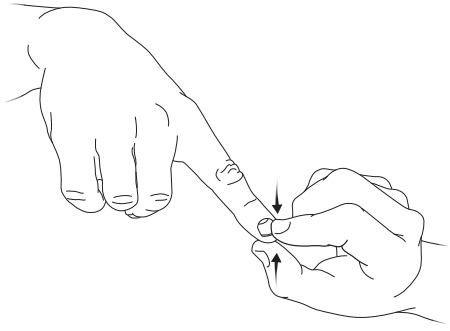
Colour

Some areas of the skin reflect the colour of the blood underneath and this can change due to problems such as breathing difficulty or shock.

You can check for colour by looking at the inside of the lips, around the eyes and under the nails. In a healthy person, these areas will look pink if there is good blood flow.

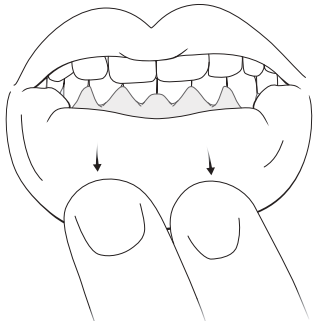
What should you do:

Capillary refill



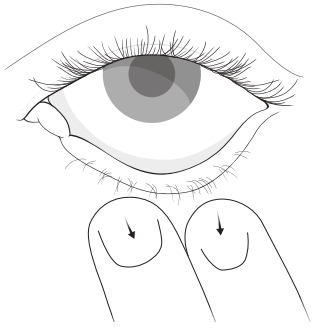
- Finger/Toenails
  - Pinch/squeeze the end of the finger-nail to push the blood out
  - Time how long it takes for the colour to return underneath the nail bed

Checking lips for colour



- Lips
  - Gently pull the lower lip down and looking at the gum on the inside of the lip

Checking the lower eyelid for colour



- Eyes
  - Gently pulling down the lower eyelid
    - Do not touch the eye itself
  - Check the colour of the flesh inside the lower eyelid

What do you see:

- Normal
  - Colour is pink
  - Colour returns to the fingernails in less than 2 seconds
- Not normal
  - Colour is pale, blue or yellow
  - Colour takes more than 2 seconds to return to the nail bed

Note: If someone has damaged their arm or leg, it is useful to compare the colour and circulation in both the injured and uninjured limb. If they are very different, it may be that the injury is affecting the circulation to the limb.

What should you do:

- Check temperature and moisture (dry or wet) by placing the back of your hand on the person's skin
- Acceptable places to feel for temperature include:
  - The forehead
  - The back of the neck
  - Inside the collar (if clothing is worn)
- Always tell the person what you are going to do and be respectful

Temperature

You can compare normal temperature and moisture for a person at rest with other conditions.

- Normal temperature and moisture
  - Warm and dry to the touch
- Not normal
  - Cold and moist/sweaty
  - Hot and moist/sweaty
  - Cold and dry
  - Hot and dry

In this way, temperature and moisture can suggest what is wrong with a person. For example:

- Someone who is cold but still sweating may be showing signs of shock (see page 80)
- Someone who is hot, but whose skin feels very dry, may be suffering from over-heating (see page 137)
- Someone who is hot and sweaty may have a fever

However, do not use one single vital sign. A number of signs together will always be more reliable (e.g. pulse, breathing and temperature).

Monitoring Blood Oxygen Levels

If available, a device known as a pulse oximeter can be used to measure both the pulse rate and the level of oxygen in a person's blood. The level of oxygen in the blood, also known as the 'oxygen saturation level' or 'SpO_2 level', is another useful vital sign.

The most common of these devices fits on the person's finger and does not cause them any harm or pain - see appendix III. However, these devices will only tell you about the pulse rate and not how strong or regular it is. For this reason, you should also take the pulse manually, as described above, even when using the pulse oximeter.

Normal Vital Signs

The table below shows what you can expect to see, feel or measure in an adult person with normal vital signs.

Level of consciousness	Alert and aware of what is happening
Breathing	12-20 breaths per minute Quiet Relaxed
Heart rate/pulse	60-100 beats per minute
Pupil size and reaction	Pupils are equal in size and get smaller in response to light
Colour	Less than 2 seconds for blood to return to the nail bed
Temperature and moisture	Touch: Warm and dry Thermometer: 36-37 Celsius

3.3 The History of the Illness

An ill or injured person may be able to tell you about their problem (e.g. when the problem started, where the pain is). Asking questions and noting the answers is an important skill. The **S.A.M.P.L.E.** method will help you remember what questions to ask.

S - Symptoms

- How do they feel?
- What is the main problem?
- What else do they feel?
  - E.g. Hot, cold, headache, pain, nauseous, dizzy, afraid

A - Allergies

- Are they allergic to anything?
- Have they recently been in contact with an allergen?
  - E.g. bee stings, foods, medicines, etc.

M - Medication

- Are they taking any medication?
  - Prescribed by a doctor?
  - Bought in a shop?
- Or:
  - Recreational drugs?
  - Alcohol?
  - Herbal remedies?

P - Previous medical history

- Has this happened before?
- Has the person had any other medical problems in the past?
  - E.g. heart or breathing problems, seizures, diabetes
- Is there anything else about their health that the person would like to tell you?

L - Last intake/output

- When did you last eat?
  - What did you eat?
- When did you last drink?
  - What did you drink?

- When did you last urinate?
  - Was there anything unusual (e.g. blood in the urine, an unusual colour, pain)?
- When did you last defecate?
  - Was there anything unusual (e.g. blood, strange smell, pain)?
- Have you vomited or been sick?
  - When was this?

E - Events

- How long have you had this problem?
- When did you last feel well?
- What were you doing before the problem started?
- Is there anything that has happened that may be causing you to feel unwell?

Specific symptoms

More information can be gathered about individual symptoms by using the **O.P.Q.R.S.T.** method.

O - Onset

- When did the pain/discomfort start?
- Did it start suddenly or slowly?

P - Provokes or eases

- What makes the pain worse?
- Does anything reduce the pain?

Q - Quality

- What does the pain feel like?
  - E.g. hot, sharp or dull
- Is the pain there all the time or only sometimes?
  - When is it painful?

R - Region

- Where does it hurt?
- Does the pain seem to spread out or radiate?
- Does the pain stay in the same area or does it move?
  - What causes it to move?

S - Severity

- How bad is the pain?
  - How would you score the pain on a scale of 1 to 10, if 1 is no pain at all and 10 is the worst pain you can imagine?

T - Time

- When did you start to feel the pain?
  - How long have you had this discomfort?

3.4 Mechanism of Injury: What Happened?

If someone has been injured, it is useful to know what happened (the 'mechanism of injury') as this can help you to understand the extent and severity of a person's injuries.

When approaching an incident, look for signs of what has happened. You might also ask eye-witnesses to describe the incident.

Try to understand:

- The nature of the incident
  - E.g. vehicle collision, fall, punch
- The forces applied to the person(s)
  - E.g. was the vehicle moving slowly or at high speed?
  - E.g. what height did the person fall from?
- Areas of the body impacted
  - E.g. was there a blow to the head, did the person's chest hit anything?

For example:

- A person in a high speed car crash may have severe injuries to the head and chest, particularly if they were not wearing a seat belt
- A person who has fallen from a bicycle and banged their head on a concrete surface may have a serious head injury

Note: The mechanism of injury provides useful information about injuries and injury patterns, but it is still important to complete a full ABCDE check of the person – see chapter 2.

3.5 Making and Keeping Records

Recording (writing down) the information that you gather is important for several reasons:

- You will not remember everything that you are told or that you see
- You will often take the vital signs more than once
- You need to know if the signs are changing and if so, how?
- You may need to share this information with a member of the emergency medical services
  - To ask for advice on what to do
  - To tell them what has happened and what you have done

Any notes that you make about a person should be regarded as a legal document. The notes must be accurate and complete. It is useful to use a ready-made form for this purpose – ask your team leader where to get one.

4 Basic Life Support

Basic life support refers to actions that help to open a person's airway, maintain breathing and circulation. In simple terms, this is life-saving First Aid for seriously ill or injured people to keep them breathing and stop any bleeds.

A key skill in providing basic life support is the ability to give cardio-pulmonary resuscitation (CPR) and to use an automated external defibrillator (AED) if there is one available.

The most common reason for a person requiring basic life support from a First Responder is because they have suffered a heart or 'cardiac' arrest.

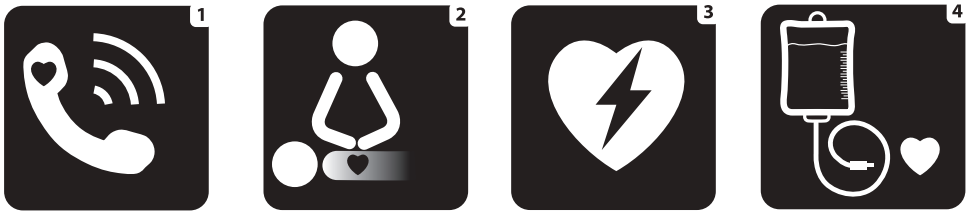
4.1 Cardio-Pulmonary Resuscitation (CPR)

You should be familiar with CPR (cardio-pulmonary resuscitation) from your basic First Aid training.

CPR is part of the **'Chain of Survival'**, a sequence of events that describes what must happen to give a person in heart/cardiac arrest the best chance of surviving. The Chain of Survival must begin as soon as the heart stops and has four stages:

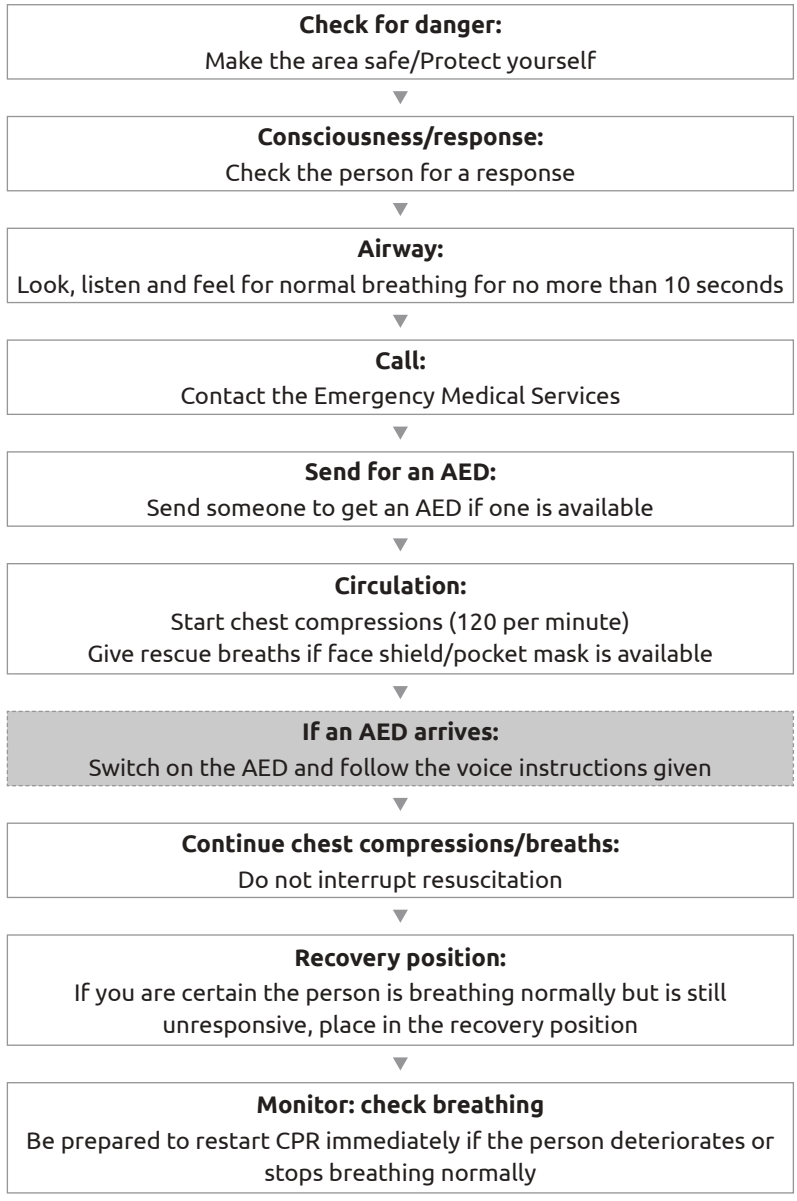
1. Someone urgently calls for emergency help (this might be you)
2. CPR is performed
3. A defibrillator is used
4. Advanced medical care is provided

The 'Chain of Survival'



The basic life support (CPR) procedure

The procedure for checking an unresponsive person who is not breathing normally and for providing CPR is as follows:



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CPR for Adults

For adult CPR give chest compressions at a rate of 100-120 compressions per minute. Ensure that your hands are in the correct position on the person's chest and that each compression is to a depth of 5-6 centimetres.

If you have a barrier device such as a face shield or pocket mask (see below), then you can also give rescue breaths if you are able to. These are given at the rate of 2 breaths after every 30 compressions. Do NOT breathe too hard, just enough to see the chest begin to rise.

Compressions

CPR for Children

To give CPR to a child (i.e. someone who has not yet reached puberty), follow these steps:

- Begin with 5 rescue breaths, using a barrier device
- Give chest compressions at a rate of 100-120 per minute
  - Press down at least one-third of the depth of the child's chest. If the child is small, you may use only one hand to give compressions
- Give further rescue breaths, using a barrier device, after each set of 30 compressions

CPR for Infants/Babies

Refer to your basic training for advice on providing CPR to infants under 1 year old.

Barrier Devices for Rescue Breaths

Face shields and pocket masks help protect you from infection when a First Responder gives rescue breaths to a person. They avoid the need for mouth-to-mouth contact and should always be used when giving rescue breaths. If they are not available, it is acceptable to do continuous chest compressions only, as this can also help.

Face shields

Face shields are plastic barriers with a filter in the centre.

- Unfold the face shield
- Ensure the filter is placed over the unconscious person's mouth
- Pinch the person's nostrils shut
- Deliver rescue breaths through the filter into their mouth

Face shield

You should kneel beside the person to deliver rescue breaths using a face shield

Pocket masks

Pocket masks are more rigid than a face shield and have a mouthpiece through which you deliver the rescue breaths to the unconscious person.

- Open the person's airway
- Place the mask over the mouth and nose to form a seal
- Deliver rescue breaths

Pocket face mask

You should receive training in the use of a pocket mask before using one.

CPR with Two First Responders

If someone is able to help you do CPR you will be able to continue for much longer than one person alone. Each responder sits on opposite sides of the ill or injured person.

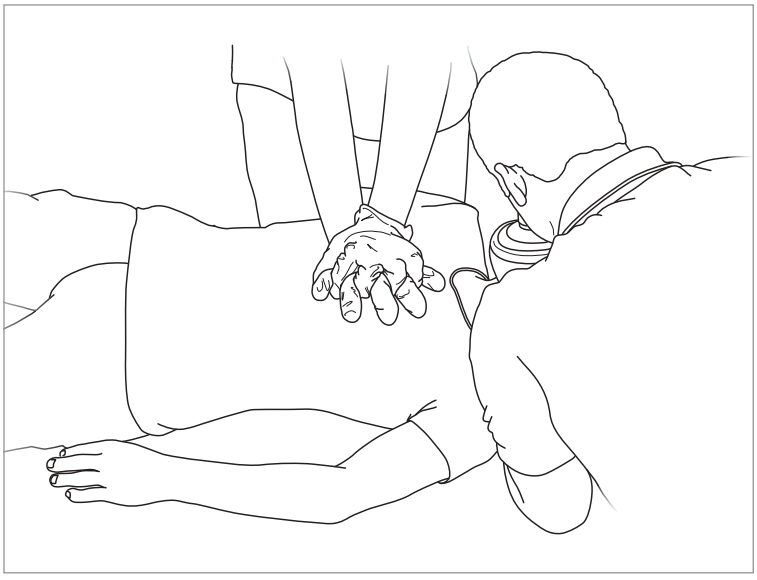
2-Person CPR with compressions only:

- The First Responder does CPR for 2 minutes
- After 2 minutes:
  - The First Responder removes their hands from the affected person's chest
  - and the other First Responder immediately places their hands in the correct position and continues the compressions for a further 2 minutes
- Swap again after 2 minutes and continue

2-Person CPR with compressions and rescue breaths:

- The First Responder does CPR for 2 minutes
- After 2 minutes:
  - The First Responder gives 2 rescue breaths
  - The other First Responder gets in position to give compressions
- As soon as the First Responder has given 2 rescue breaths, the other First Responder gives compressions/breaths for 2 minutes
- Swap again after 2 minutes and continue

2-person CPR



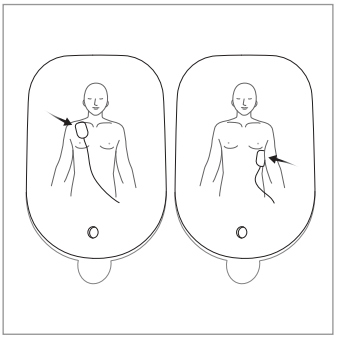
4.2 Using an Automated External Defibrillator (AED)

One of the four key steps in the chain of survival is the early use of a defibrillator on the affected person. This is why it is important to ensure that help is coming even before you begin CPR.

An **Automated External Defibrillator** or 'AED', is a machine that can be used safely by members of the public without training. The AED delivers a safe electric shock to a person whose heart has stopped pumping in an effort to re-set it.

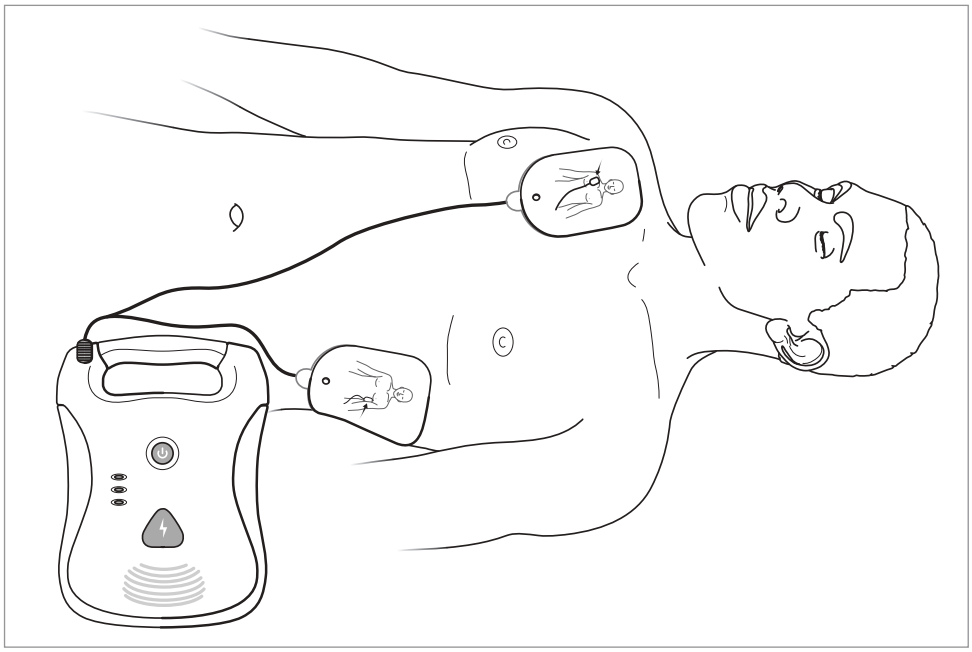
Automated External Defibrillator (AED)

Defibrillation pads



- Attach the pads to the person's bare chest as indicated by the diagram on each pad
  - The first pad goes on the upper right side just below the collarbone
  - The second pad goes on the person's left side just below the armpit

Switch on the AED and then remove the backing film. Place the sticky pads in the correct positions.



1. Upper right side – just below the collar bone (clavicle)
2. Left side, just below the armpit – aligned with the long edge down the body
3. Pads must be completely attached to the body

Note: Do not use the AED in water (e.g. a swimming pool or river). However, it is okay to use it if the ground is damp.

Note: The AED will not allow you to shock a person who does not need it.

See appendix IV: Using an Automated External Defibrillator

4.3 CPR for Drowning Incidents

Do NOT risk your life entering water to rescue a drowning person unless you are trained to do so. Remain on the shore or in a place of safety and throw a rope or other object that the person can hold on to.

Drowning incidents are common and can result in a blocked airway due to the throat muscles tightening. The airway can also swell due to irritation from the inhaled liquid. In these cases, CPR can help to save lives.

What should you do:

- Remove the person from the water, if you can do so safely and without danger to yourself
- If the person is unconscious and not breathing adequately:
  - Give 5 rescue breaths and continue with normal CPR (see chapter 4)
- If the person is unconscious and breathing:
  - Treat as for an unconscious person (see chapter 2)
- If the person is conscious:
  - Place them in the recovery position
  - Look out for signs of vomiting
    - Keep the airway clear of vomit
  - Remove wet clothing and keep the person warm
  - Seek urgent medical assistance
  - Monitor the vital signs

Note: Even if the person seems to make a full recovery after drowning, they should still see a doctor as problems may occur later on.

5 Airway & Breathing

5.1 The Airway

The airway refers to the passage from the mouth to the lungs via the windpipe. In order for someone to breathe normally, the airway must be open and unobstructed.

The conscious person

If a person is able to talk, they are also able to breathe. However, this does not mean they are breathing adequately or comfortably.

If a conscious person is having breathing difficulties, you should:

- Check if they are choking and if they are:
  - Begin back slaps and stomach thrusts (refer to your basic training)
- Allow them to find a comfortable position to rest
  - They may prefer to sit rather than stand
  - It may help if they sit with their arms raised on the back of a chair

Breathing difficulty

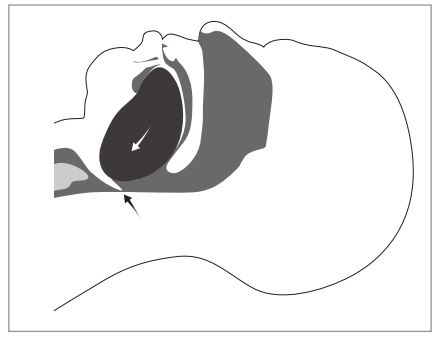
- Loosen tight clothing
- Remain calm and try to reassure the person
  - Psychological distress can worsen a breathing difficulty
- Monitor their breathing rate, rhythm and character at regular intervals
  - If breathing is less than 10 breaths per minute, it may become necessary to provide basic life support

The unconscious person

If a person loses consciousness their airway may become blocked for the following reasons:

- The tongue may fall back and block the throat
- The coughing reflex that clears the throat may be lost
  - Fluids such as saliva, blood and vomit can block the airway

A blocked airway



For this reason, it is essential to assist an unconscious person by opening their airway. To do this use the **head tilt/chin lift** method - see page 22.

Head tilt/chin lift method

Fluids in the mouth & throat

If a person has vomited or there is bleeding in the mouth, these fluids can block the airway. In some cases even normal saliva can lead to difficulty in breathing.

- You should clear the fluid by rolling the person onto their side, into the recovery position, and ensuring that the fluid drains effectively.

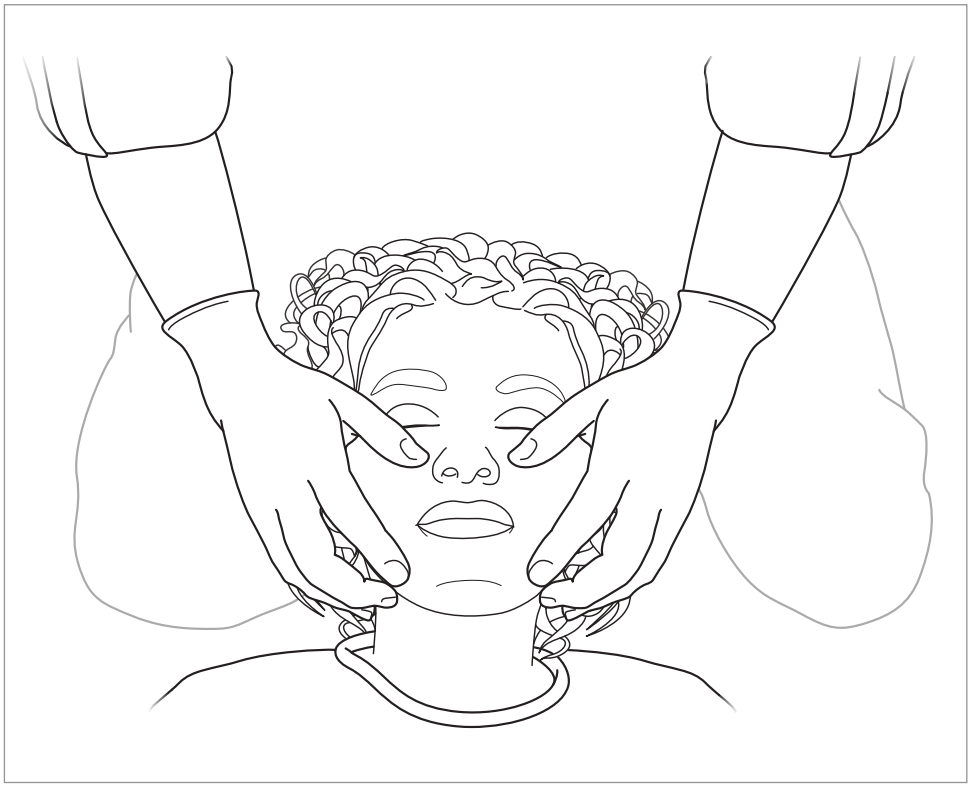
Note: When a person is unconscious, the stomach fluids can leak back into the throat and block the airway. This is known as 'passive vomiting'. These fluids are very acidic and if the person inhales these them into their lungs it can cause life-threatening problems.

Passive vomiting is not a sudden and obvious event, such as when a conscious person is being sick. It may happen very quietly with little obvious sign other than some wheezing or gurgling, before the person stops breathing altogether.

If you suspect a neck/spinal injury in an unconscious person

If there is a risk of neck/spinal injury or other serious injury, you should try to apply a 'jaw thrust' rather than a head tilt/chin lift.

Jaw thrust



5.2 Shortness of Breath (Dyspnoea)

Feeling short of breath is normal after exercise or hard work. In a healthy person this is normal and after a few minutes the person will be breathing normally again. However, in some cases, shortness of breath may indicate a more serious problem.

What do you see:

- A person with a breathing problem may:
  - Complain of 'not getting enough air' or 'feeling tight in the chest'
  - Be short of breath for no obvious reason
  - Feel out of breath doing something that is not normally tiring for them
  - Become short of breath more quickly than normal
  - Be short of breath for an unusually long time
  - Become short of breath suddenly

What should you do:

- If a person suddenly starts to breathe with difficulty:
  - Treat the cause (e.g. asthma) and get medical help

Pre-existing breathing problems

When a person has had a breathing problem for a long time, it is often caused by diseases such as lung disease, obesity or heart disease. If a person has an existing breathing problem that has recently become worse, arrange for them to see a doctor.

5.3 Illnesses and Injuries Commonly Associated with Difficulty in Breathing

- Gunshot wounds – see page 73
- Open chest wounds – see page 74
- Asthma – see page 125
- Heart attack – see page 127
- Anaphylactic shock – see page 133

6 Circulation: The Management of Bleeds

The control of bleeding is a life-saving action that has three aims:

- To control the loss of blood
- To prevent infection
- To aid recovery and limit scarring

6.1 Controlling a Bleed

Controlling a bleed is best done by applying direct pressure to the wound. Do this by placing a dressing over the wound and then putting your gloved hand on the dressing and pressing firmly – it is acceptable to ask the injured person to press on the dressing if they are able to do it effectively.

- Check that you are not pushing anything into the wound before applying pressure
- You may need to apply pressure for several minutes before the bleeding is controlled
- Do not remove the dressing to see if the bleeding has stopped
- If the dressing becomes soaked in blood, place another one on top of it and apply more pressure

Controlling a bleed

6.2 Managing Minor Skin Wounds

What should you do:

Clean the wound

Cleaning a wound is the best way to prevent infection and aid the healing process. It is important to clean a wound thoroughly and extensively. A wound that looks clean may still contain many bacteria and microbes.

The most effective way to clean a wound is to use large amounts of clean water (i.e. water that is drinkable or which has been boiled and allowed to cool) to flush out and dilute any germs and dirt in the wound.

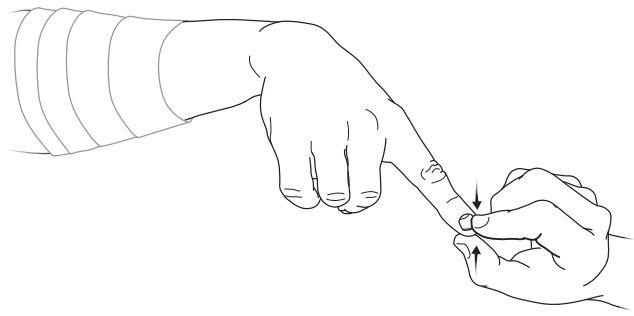
- Clean around the wound with soap and water
- Even for a small wound, use as much as 1.5 litres of water to clean the wound thoroughly
- Pour water directly onto the wound
- Stop cleaning the wound if bleeding increases or there is a severe increase in pain
- For severe bleeds, do NOT clean the wound or delay transporting the person to a clinic or hospital where advanced care can be provided

Dressing the wound

When the bleeding is under control, fasten the wound dressing in place using a suitable bandage. Ensure that:

- The bandage is flat and covers the dressing completely
- The bandage is firm enough not to slip but not too tight
  - If on a limb, check the finger/toes for circulation, colour and feeling

Checking for circulation



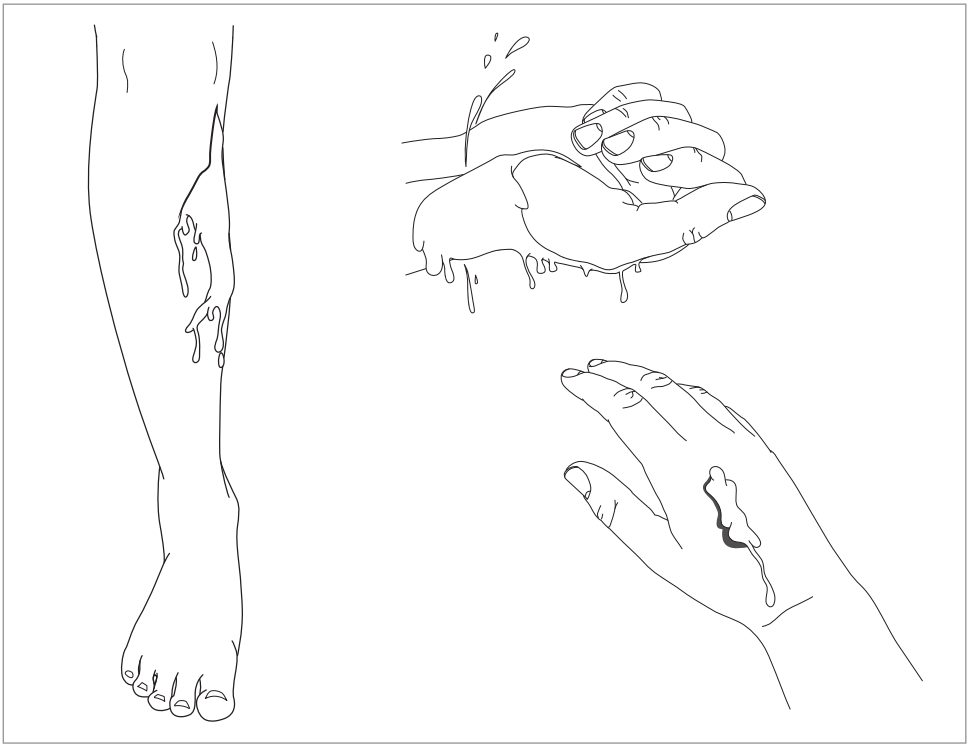
Once the wound has been dressed

- Advise the person or their carer what to do next
  - E.g. do they need to visit a doctor?
  - E.g. how will they know if the wound has become infected and needs treatment?

6.3 Severe Bleeding

A severe bleed is one that could potentially become life-threatening if not stopped soon. These are the bleeds you will look for during the 'C-Circulation' check (see page 25). These wounds may have exposed muscle, tendons and bone. An injured person with serious bleeding must always receive medical care.

Severe bleeding



Controlling a Severe Bleed

Apply direct pressure to a wound to control severe bleeding. This should be done immediately after checking there are no foreign objects in the wound.

What should you do:

You can control the bleeding by applying direct pressure.

- Apply pressure until the bleeding is under control
  - You will need to apply more pressure for longer than to a minor wound
  - It may be appropriate to use a pressure dressing
- Do NOT clean the wound or irrigate with water
  - The priority is to control the bleeding and arrange for urgent medical care

A pressure dressing

A pressure dressing is a dressing that applies pressure to the wound as you would with your hand. However, the advantage of the pressure dressing is that, once applied, you do not have to hold the dressing in place. This can be very useful if there is more than one wound to be treated.

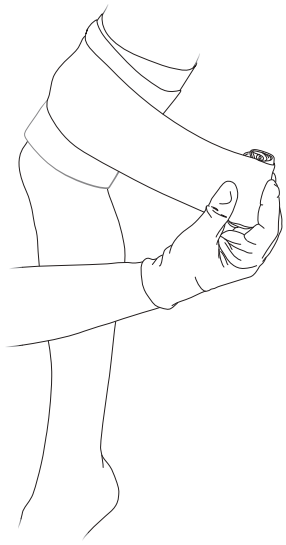
When to apply a pressure dressing to a serious wound?

- If you need your hands free to treat other wounds
- If the wound is large and bleeding a lot
- If you have failed to stop the bleed with an ordinary dressing
  - Do not remove the dressing, just firmly tie a bandage over it
- If there is life-threatening bleeding and you do not have access to a tourniquet of any kind
- To fully control a bleed after you have applied a tourniquet

How to apply a pressure dressing?

- Apply a pad to the wound
  - Some pressure bandages have a pad attached
- Wrap the bandage around the person's body or limb so that it covers the pad
  - Pressure bandages are usually stretchy so you need to pull it quite tight
- Fasten the bandage securely

Using a pressure dressing



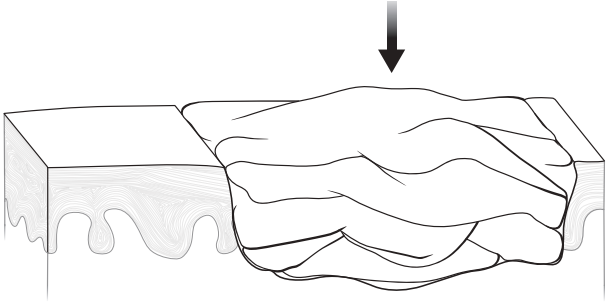
Note: The aim of a pressure dressing is to apply enough pressure to stop the bleed, but not so much that circulation is stopped below the injury.

Note: Do not use pressure dressings on neck wounds, use your hand only.

Packing a wound

If the wound has left a hole or cavity in the person's body you will need to fill the hole with some kind of dressing before placing another on top and applying direct pressure. If this is not done, the wound will continue to bleed underneath the dressing.

Packing a wound



6.4 Immediately Life-Threatening (Catastrophic) Bleeds

In rare circumstances, you may find a wound that is causing so much blood loss that the injured person will die if the bleeding is not controlled immediately. This is known as 'catastrophic bleed'.

Examples of situations that might cause an immediately life-threatening/catastrophic bleed include:

- A traumatic amputation of a leg after someone steps on an anti-personnel mine
- The full or partial amputation of a limb, during a road traffic collision
- An open fracture of a femur (thigh bone) that has wounded the femoral artery

What do you see:

- The person is rapidly losing a **very large** amount of blood
- The blood is spurting or gushing from the wound
- Possible amputation of a leg(s)
- Possible wound to the thigh

It can be difficult to estimate the volume of blood that is being lost, as even a small amount can look very dramatic and serious, therefore look for active blood loss rather than just the presence of blood on the injured person.

It is most likely that you will never find a person this badly injured, but if you do, your quick action could save their life.

What should you do:

The severity of these wounds means that you must control the bleeding as soon as you have taken care of any danger and the **D.R.A.B.C.D.E.** procedure becomes **D.(C).R.A.B.C.D.E.** where (C) stands for 'Catastrophic Bleed'.

Do not stop to check the airway or breathing before treating this type of wound - it will be too late and the injured person will have died.

Blood-loss from a catastrophic bleed must be stopped rapidly. You may not stop all the bleeding immediately, but if you can stop most of it you will be saving a life.

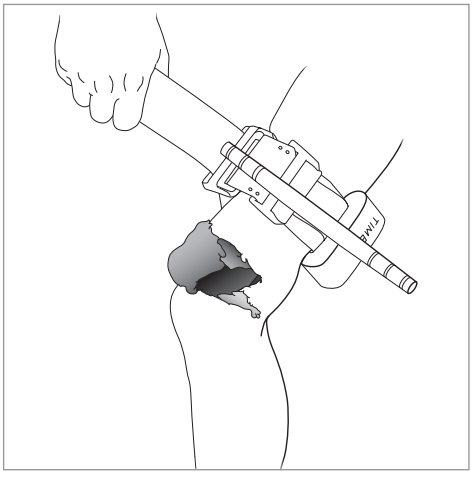
- Options for controlling a catastrophic bleed include:
  - Direct Pressure
    - Including pressure dressings (see page 66)
  - Tourniquets

As well as controlling the bleed, you should try to keep the person warm and monitor for signs or shock and hypothermia.

Application of a Tourniquet

A tourniquet is a tight bandage or band that is fixed around a limb in order to stop the flow of blood through an artery. Tourniquets may be commercially made or improvised with available materials.

A commercial tourniquet



Note: The correct use and application of a tourniquet requires practical training. The description below is meant for general information only.

When to apply a tourniquet?

You may need to use a tourniquet when direct pressure is not sufficient or it is not possible to control catastrophic bleeding from an arm or leg.

This might include an occasion when the injured person:

- Has a gushing arterial bleed that cannot be stopped using other methods
- Has had a limb amputated and the stump is bleeding uncontrollably
- Is losing very large amounts of blood and ...
  - ... is one of many seriously injured people that you need to treat
  - ... is in a dangerous situation and needs to be moved quickly
  - ... to prevent delays in transporting the injured person to nearby medical care

What should you do:

- The tourniquet should be positioned at least 5cm above the site of the injury
  - i.e. closer to the body
  - On uninjured skin
- The tourniquet will be most effective when you apply it to the upper part of a limb
  - Mid-way on the thigh bone or the upper arm
- Do not put the tourniquet over a joint
- If the injured person is conscious, tell them what you are about to do:
  - Explain that it will hurt and that you must do it to save their life
- Apply the tourniquet tightly to control the bleeding
  - This will cause pain but failure to tighten the tourniquet sufficiently is a mistake
- If the bleeding does not stop:
  - Leave the tourniquet in place
  - Apply a second tourniquet above the first (i.e. on the opposite side to the wound)
- Leave the tourniquet visible and label the person to show that a tourniquet is there
  - Note the time and place of application
    - E.g. 'Tq, 1105, L.Leg' would mean: Tourniquet, applied at 11:05 on the left leg
  - Mark the person with a 'T' on the forehead so other First Responders can see it easily
- A person with a tourniquet is a priority for transport to hospital and medical care (see page 156 - Triage)

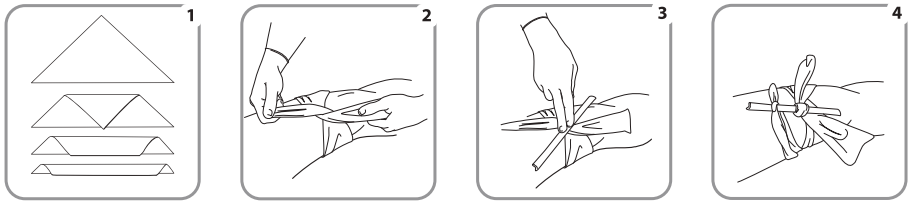
If you have to improvise

A tourniquet can be improvised from a triangular bandage or other strong, non-stretch cloth (e.g. a bed sheet). However, it is difficult to do this effectively.

If improvisation is the only option:

1. Fold a triangular bandage or cloth to make a 4cm wide strip
2. Tie the bandage/cloth around the limb with a single overhand knot
3. Place a lever on to the knot and tie this in place securely
4. Twist the lever to tighten the tourniquet until the bleeding stops (fasten the lever in position to ensure the tension is maintained)

Making an improvised tourniquet



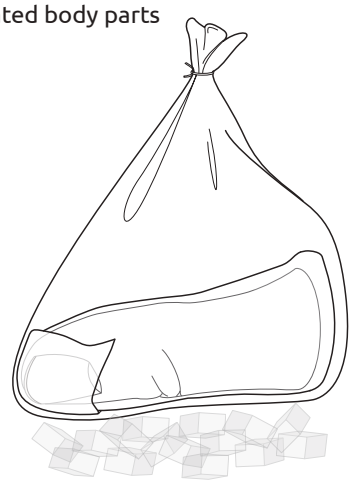
6.5 Amputated Body Parts

If someone has suffered an amputation, your priority is to control the bleeding and provide other treatment to the injured person. Once this is done, you may consider what to do with the severed part (e.g. hand, foot or finger).

What should you do:

- If it is safe to do so, find the missing body part
- Lightly rinse with clean water or saline to remove obvious dirt
- Place in a damp cloth and then into a clean plastic bag
- Put the bag onto some ice or chilled water but do not freeze the body part or let it touch the ice
- Make sure that the body part goes to hospital along with the injured person

Amputated body parts



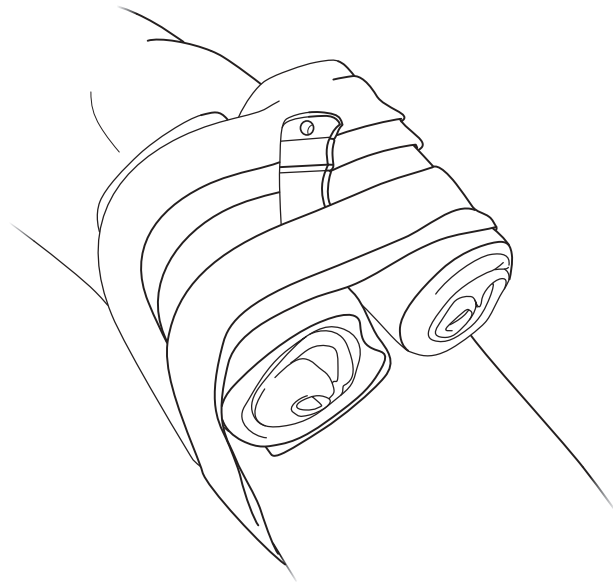
6.6 Foreign Objects in Wounds

You may find that there is an object in the wound that cannot be washed out. Remember do NOT try and pull it out – you may make the wound worse. Care for the wound as instructed during your basic training.

What should you do:

- Leave the object in the wound
- Place pads around the object to prevent it from moving
- Bandage or tape the padding in place
- Ensure that the injured person receives medical care

Stabilizing a foreign object



6.7 Gunshot Wounds

Injuries from gunshots can be difficult to manage for several reasons:

- Safety
  - Is it safe for you to treat the injured person?
  - Is the person with the gun still nearby?
    - Do they present a danger to you or anyone else?
- Extent of injury
  - There may be a large amount of internal injury
  - You will not know how much damage has been done inside the body
    - Keep checking the person for signs of shock (see page 80)

What do you see:

- Entry wound
  - The point at which the bullet entered the body
    - This may be very small and hard to find
- Exit wound
  - A bullet may remain in the body or pass through it leaving an exit wound
    - Exit wounds can be very large
    - The exit wound may be anywhere in the body

What should you do:

- If there has been a shooting
  - Examine people very carefully
    - Bullet holes can be very small and easy to miss
- If there is a large exit wound
  - Pack the hole before applying pressure to control the bleeding
- Treat the injured person for shock
- Wounds to the chest should be treated as for an open chest wound (see below)
- The injured person needs medical care

Note: See also 'Open Chest Wounds' below.

6.8 Open Chest Wounds

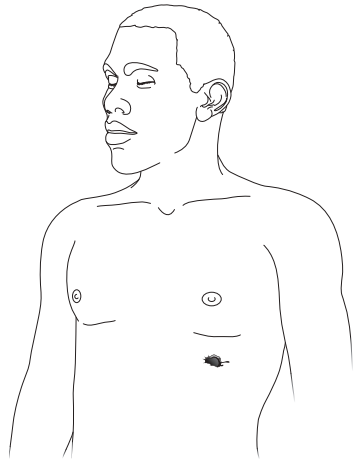
Open or 'penetrating' chest wounds are caused by a foreign object puncturing the chest wall (e.g. in the case of a stabbing or gunshot wound). A penetrating wound may or may not involve injury to a lung but should still be treated in the same way.

One of the problems with this type of injury is that air can be sucked through the wound and into the chest. You may even hear a sucking sound. This type of injury needs rapid help.

What do you see:

- Besides any obvious visual sign of an injury, such as a hole in the chest, the most likely signs of chest injury include:
  - Changes in breathing rate
  - Difficulty in breathing
  - Pain on breathing
    - Often the injured person will hold the damaged area
  - 'Wet' sucking noises from the chest
- Other signs include:
  - Bruising to the chest
  - Noisy breathing
  - Laboured breathing – 'heaving' of chest and shoulders
  - Cyanosis (blueness) of the lips
  - The chest, shoulders or neck appear/feel swollen or 'puffy'
    - This is caused by air entering the chest cavity

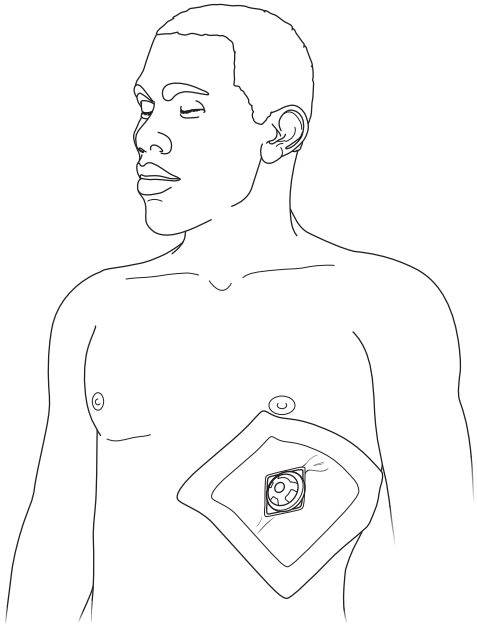
Open chest wound



What should you do:

- If you have one, use a specialised/commercial chest seal to cover the hole
  - If the chest is wet from blood, sweat, etc, quickly wipe it dry – you can use the injured person's clothing
- If a specialised chest seal is not available:
  - If there is severe bleeding:
    - Cover the wound with a gauze dressing
    - Do NOT let the dressing seal the wound completely
    - Replace the dressing if necessary
  - If there is limited or no bleeding:
    - Leave the wound uncovered
- If the injured person is conscious:
  - Help them find a comfortable seating position and provide support
  - Lean towards the injured side if possible
- If the injured person is unconscious:
  - Place in the recovery position
  - Lie them on the injured side if possible

A commercial chest seal



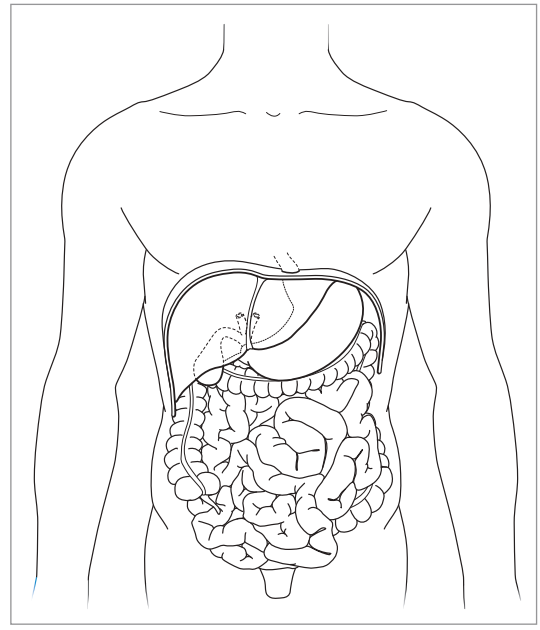
Note: It is also possible to improvise a 3-sided chest seal. If you do this, ensure that it does NOT end up forming a seal over chest wound – check regularly.

Note: A penetrating chest wound is always a medical emergency even if the injured person appears to be breathing normally.

6.9 Abdominal Injury

The abdomen is the area between the diaphragm, at the lower end of the rib cage and the pelvis. The abdomen contains multiple organs including the liver, spleen and colon. The kidneys can also be considered as part of the same area.

The abdomen

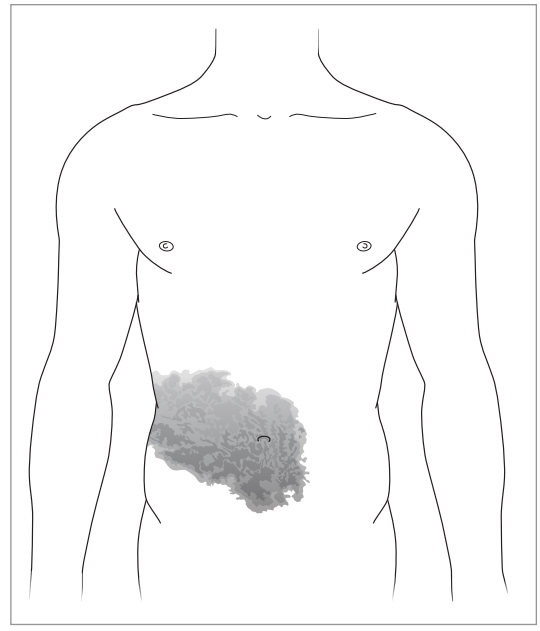


Extent of abdominal injury

It can be difficult to decide how bad an abdominal injury is as the damage is mostly within the body.

- Abdominal injuries may result in large amounts of internal bleeding
- The injured person must be carefully monitored for signs of shock

Signs of internal bleeding



Examples of incidents that may cause abdominal injury include:

Blunt trauma

- Road traffic incident
- Punch to the abdomen
- Kick from a horse/donkey/mule
- A fall

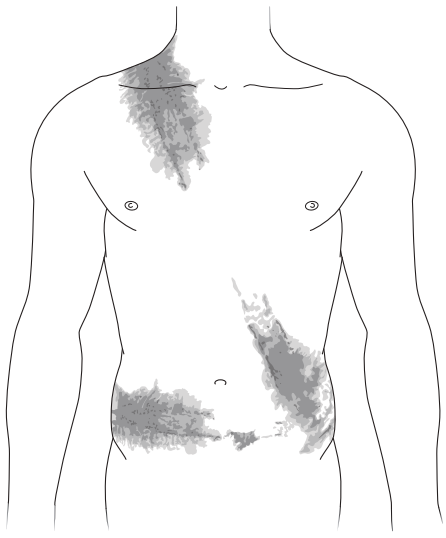
Penetrating trauma

- Stab wound
- Impaled by rebar from a building collapse
- A fall onto a sharp object

What do you see:

- Look for the following signs:
  - Abrasion, bruising or bleeding anywhere on the abdomen
  - Bruising where a seat belt has restrained the person (vehicle incidents)
  - Impaled objects
  - Entry and exit holes (gunshot wounds)
- Other signs:
  - The injured person raises their legs to ease the pain in the abdomen
  - Tension (tightness) in any part of the abdomen
  - Distortion to the shape of the abdomen
  - Swelling in all or part of the abdomen
  - Shallow breathing
  - Signs of shock

Seatbelt pattern bruising



Ask the injured person about the following:

- Where is the pain located?
- Have they vomited?
- Was there blood in the vomit?
- Is there blood in their urine?

Monitor vital signs for indications of shock

- Declining level of consciousness
- Fast shallow breathing
- Fast weak pulse
- Greyness or pale colour
- Sweating

What should you do:

Abdominal injuries can be more serious than they look. You should be careful not to assume that because an injury looks minor it is not something more serious.

- If serious injury appears unlikely:
  - The injured person should be monitored for 24 hours for:
    - Signs of shock, vomiting or internal bleeding
    - Any general worsening in their discomfort
- If you are concerned that the problem may be serious:
  - Treat the injured person for shock
  - Monitor and record vital signs
  - Arrange for transport to medical care
- Penetrating injury
  - If something has pierced the skin, dress the wound and arrange for the injured person to receive medical attention
- Impaled object
  - Leave the object in place – do NOT attempt to remove the object
  - Stabilise the object and ensure that the injured person receives medical care
- Protruding intestines
  - If the intestines are visible in an open wound, do not attempt to push them back in
  - Clean the intestines with clean water or saline
  - Cover with damp dressings

- Secure the dressings lightly in place with clean plastic (e.g. plastic food wrap)
- Prevent the intestines from drying out
  - Lightly wet the dressing if necessary
- Ensure that the injured person receives urgent medical attention

Note: A conscious person with an abdominal injury may be more comfortable semi-lying with their knees slightly raised.

6.10 Internal Bleeding

Internal bleeding occurs when blood from a wound remains inside the injured person's body. Injury to the abdomen, pelvis and the femur can result in large amounts of internal bleeding.

Internal bleeding can be caused by many types of injury.

- An impact with a blunt object, such as a fall or punch, can cause a lot of internal bleeding but leave little sign of damage on the skin
- A penetrating wound, such as a stab wound, may leave only a small cut to the skin but cause a large amount of injury inside the body

Because you cannot always see the bleeding, you must use other clues to identify the problem.

What do you see:

- The injured person has suffered a **blunt trauma** or **penetrating injury**
- Bruising or deep discolouration to the skin
  - This is not always near the site of an injury
    - Blood will flow downwards even inside the body
- The injured person is showing signs of shock (see below)
  - This is shown by changes to their vital signs

What should you do:

- Treat the injured person for shock
- Monitor and record vital signs
- Beware if the person becomes unconscious
- Arrange for urgent transportation to a hospital

6.11 Shock

Shock describes the body's reaction when tissues are not supplied with adequate amounts of oxygen. Changes to blood flow or blood pressure can result in shock. It is a serious and potentially life-threatening condition.

A simplified definition of shock is: **'A lack of oxygen to the vital organs'**.

Shock can be caused by many different types of illness and injury.

Causes of shock include:

- Blood loss
- Internal bleeding
- Spinal injury
- Anaphylactic reaction
- Heart problems

In cases of mild shock, the body may be able to **compensate** for a drop in blood pressure by increasing the heart rate and reducing the flow of blood to less important parts of the body. However, a person's health will decline if nothing is done to stop the shock from worsening.

If shock is allowed to develop further, the body will be unable to compensate and during the later stages you will see anxiety followed by falling levels of consciousness, raised heart and breathing rates and a grey-ashen tone to the skin.

You must always be aware that any seriously ill or injured person can begin to suffer from shock. Therefore it is important to be able to recognise the signs and symptoms rapidly.

	Compensatory (Early Stage)	**Decompensation (Late Stage)**
Breathing	Fast shallow breathing	Fast shallow breathing
Heart Rate/Character	Fast and strong	Fast and weak
Level of Consciousness	Anxious, confused and dizzy	Declining consciousness
Skin colour and temperature	Cold, damp skin. Ashen grey or pale complexion	Cold, wet skin. Cyanosis or 'patchy' appearance
Blood pressure	Normal Strong radial pulse	Falling Weak radial pulse
Pupil reaction	Normal reaction	Slow to react
Other indications	Thirst, nausea and vomiting	

Note: Increased breathing and/or heart rate are the first and key indicators of shock.

What should you do:

Note: In cases of severe injury, you should assume that the person will be suffering from shock rather than wait to be certain. This is because the signs of shock may only become apparent when the condition is in its later, more serious stages.

- Check airway, breathing and circulation
- If the person is conscious
  - Lay the person flat on their back if it is safe to do so.
- If they are unconscious
  - Put them in the recovery position
- Keep calm and reassure the person
- Treat any injuries that may be causing or worsening the shock
  - E.g. major bleeds, unstabilised fractures
- Insulate from heat loss
  - E.g. place a blanket on the person, move off cold surfaces
- If the person is able to swallow:
  - Allow them to take sips of water
  - Stop them drinking if they start to feel nauseous
- Arrange for urgent transportation to medical care
- Monitor and record vital signs

Shock can be caused by many things and you should not hesitate to treat a person for shock even if the cause is unclear. Be guided by what you see.

Monitoring vital signs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7 Damage and Disability

7.1 Head Injury

A head injury occurs when a blow to the head causes damage to the brain or the blood vessels around the skull.

It can be difficult to know if an injured person has a head injury and the signs of injury may be slow to develop.

What do you see:

In addition to the mechanism of injury (what has happened to the person), changes in the level of consciousness are the first and most significant signs of head injury.

- Look for these early signs of head injury:
  - Unusual changes in behaviour
  - Disorientation and irritability
  - Feeling unusually sleepy
- Pupil size and reaction may be altered
  - E.g. one is a different size to the other
  - E.g. they do not react normally to light
- Other signs and symptoms include:
  - Prolonged and/or intense headache
  - Problem seeing properly
  - Loss of balance
  - Irregular breathing
  - Breathing becoming faster and deeper
  - Slow, strong heartbeat
  - Nausea & vomiting

- Seizures
- Bruising around the eye(s) and behind the ear(s)
- Fluid leaking from the nose and/or ear(s)

Signs of head injury

What should you do:

- You should follow this procedure if someone has a head injury:
  - Safety first
  - Check airway, breathing and circulation
  - If there is bleeding from the nose or ears, allow the bleed to continue
    - Do NOT obstruct bleeding from the nose or ears
  - Raise the head and shoulders slightly (15-20 cm)
  - Monitor and record vital signs
  - Arrange transport to medical care
- If the person is conscious:
  - Keep talking to the person
  - Look for changes in the level of awareness
  - Are they becoming confused?
  - Are they asking the same questions repeatedly?
- If the person is unconscious:
  - Monitor vital signs
  - Monitor the airway and breathing
  - Be prepared to administer CPR
  - Keep the person on their back and maintain a jaw thrust to open the airway, but place in the recovery position if there is any sign of breathing difficulty

- If a person has suffered a head injury, be aware that they may also have an injury to their neck/spine:
  - Handle them with care
  - Manually immobilize the head if possible

7.2 Spinal Injury

The spine is made up of the bones of the neck and back. Enclosed within the spine is the spinal cord that together with the brain makes up the central nervous system.

The neck is where most spinal injuries will be found.

Injuries to the spine can be hard to identify and the only clue may be the type of incident, e.g. a fall or road traffic accident. If you think a person might have suffered a spinal injury, you must ensure that they are handled and moved carefully, and that they are examined by a doctor.

What do you see:

- The person has been in an incident that may have caused an injury to the spine
  - E.g. a fall onto their head
  - E.g. a fall onto the back, particularly onto a hard object
  - E.g. a high speed collision
  - E.g. a serious injury to the head
  - E.g. a penetrating wound near to the spine (e.g. a stabbing)
- Compression of the spinal column
- Excessive sideways bending
- Pain over or near the spine
- Numbness (loss of feeling) in any part of the body
- Inability to move an arm or leg
- Tingling sensations in fingers, toes, etc.
- Loss of bladder or bowel control
- Difficulty breathing
- Signs of shock
- Contrasting skin colour and temperature (cold and pale below the injury site, warm above it)

What should you do:

It is important to take care with any possible injury to the spine. However, do not overlook the priorities of airway, breathing and circulation.

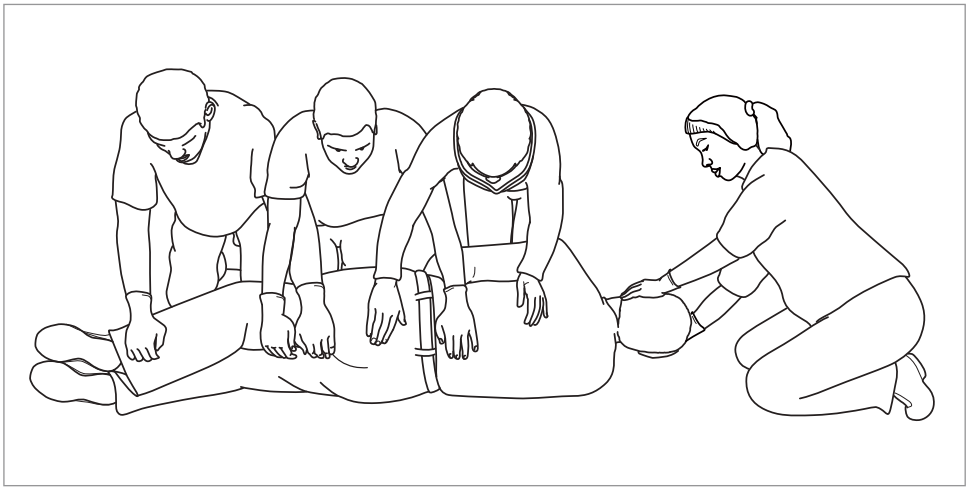
- Safety first
- Airway, Breathing, Circulation
- If the person is conscious:
  - Approach the person carefully and from the front
  - Do not make them turn their head to see you
  - Encourage them to remain still and not move their head
  - Consider carefully holding the head to help the person keep it still
  - Reassure
- If the person is unconscious and breathing normally:
  - Immobilise the head and apply the jaw thrust (see page 23)
  - Gently return the head to a neutral position (unless there is resistance)
    - This places the head, neck and spine in alignment
    - Their nose will be aligned with the centre of the chest
  - The head should be tilted neither backwards nor forwards
  - Position yourself at the person's head, in a stable position – lying down is best
    - Place a hand on either side of the head and apply the jaw thrust
    - Use the palms of your hands to stabilise the head
- If the person is unconscious with breathing difficulties/not breathing normally:
  - Roll the person into the recovery position (see below)
  - Check breathing frequently
  - Be prepared to start CPR

Placing a person in the recovery position when you suspect a spinal injury

- If you are alone or nobody is able to help:
  - Roll the person carefully into the recovery position
  - Carefully place a cushion under the person's head so that the neck is straight
  - Do not lift the head beyond the line of the spine when placing the cushion
  - Ensure the airway is open and that drainage will occur

- If there are other people present who are competent to help, use the 'log roll' method:
  - You should continue to hold the head and monitor breathing
  - Direct the helpers to roll the person into the recovery position
  - Move the head at the same time as the helpers roll the body
  - Keep head-neck-spine aligned at all times
    - If possible, keep the person's legs straight. Support with bags, cushions, people, etc, in order to prevent them from rolling too far.

A log roll



Note: Moving an injured person with a suspected spinal injury requires training and practice.

Immobilising an Injured Person

It is acceptable to make use of improvised head-blocks and similar items that encourage and remind the injured person to lie still. You may have learned how to make improvised head-blocks during your basic training.

Unless you have a stretcher designed for the purpose and are trained to do so, do not attempt to immobilise a person by fastening them on to a stretcher.

Using a stretcher for a suspected spinal injury

Note: Some ambulances may carry a 'vacuum mattress'. This is the preferred system for transporting a person with a spinal injury. You may be asked to assist in using the mattress and you should try and practise using the mattress if one is available.

When placing a person with a suspected spinal injury onto a stretcher, use the methods described on page 150.

7.3 Pelvic & Hip Injury

The Pelvis

The pelvis is a ring of bones, fused together to produce a solid and rigid structure. The pelvis contains the bowel, bladder and reproductive organs as well as the large arteries supplying the blood to the legs. A fractured pelvis is always serious, causing severe bleeding and extreme pain. Pelvic injury is a life-threatening emergency.

What do you see:

- The pelvis may be out of shape/distorted. Visually compare the left and right sides
- Signs of shock
- The injured person reports severe pain
- The person may have wet themselves (urinated)
- Possible shortening of one leg and rotation of the foot

What should you do:

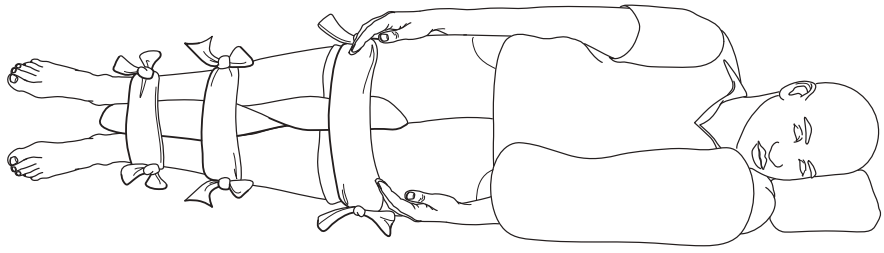
- Examine the pelvis carefully and without moving the person
  - Look for differences in shape to the left and right sides of the pelvis
  - Place hands gently on the hips to feel for instability and to compare the left and right sides
    - use only the natural weight of your hands, do NOT apply pressure, squeeze or push
  - Ask the person if they have any pain in the groin area
- Monitor and record vital signs
  - Look for signs of shock – see page 80
- Try to leave the person in the position that you find them
  - Pad under or between the knees to provide support
    - Be very careful not to move the legs while doing this
- If the person is unconscious:
  - Bind the legs together using broad bandages
  - Use padding between the legs
  - Put the person in the recovery position – this must be done with extreme care to avoid twisting the pelvis

- Use the log roll technique if you have a helper
- Keep the legs straight
- If alone or unaided, use a normal roll

- Support the person in the recovery position, without bending their legs
  - If you have to, bend the legs together, at the knees, to avoid twisting the pelvis

Pelvic injury is a medical emergency and the person requires urgent medical care.

Recovery position with legs kept straight



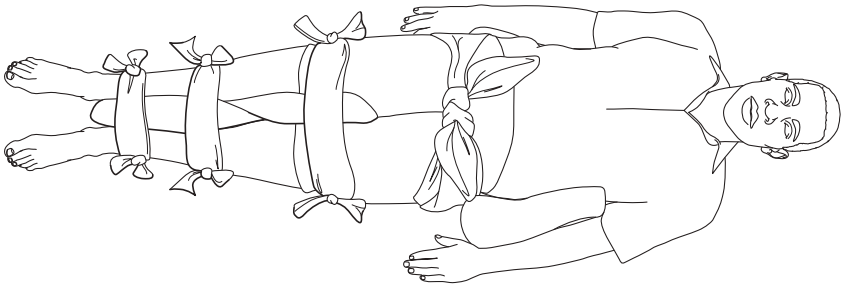
Moving and transporting

If you have to move the person before medical help arrives (see chapter 10):

- Stabilise the pelvis by passing a blanket or jacket under the pelvis and tying it across the person at the level of the groin
  - The support should not cover the abdomen
- Pad under the knees and between the legs
- Monitor the person during transport and be prepared to start CPR

It is important NOT to move the person more than necessary as this may cause more internal bleeding.

Transporting a person with a pelvic injury



The Hip Joint

The hip is where the leg meets the pelvis. Injuries to the hip joint are common in older people.

What do you see:

- A person has fallen awkwardly
- The person is unable to walk, place weight on a leg or feels considerable pain in the hip area
- Compare one leg with the other
  - The leg on the injured side appears to be shortened
  - The leg appears to be unusually rotated away from the line of the body
- Bruising around the hip area

What should you do:

- Check for signs of spinal injury
- Keep the person still
- Do NOT apply traction to the leg
- Put padding between the legs and bind together
  - Use broad bandages or other suitable material
- Arrange for transport to medical care

7.4 Femur/Thigh Injury

The thigh bone or femur is the largest bone in the body. A fracture to the femur is a potentially life threatening injury due to the large amount of blood loss that is often associated with it. In severe cases, the force of the thigh muscles on a fractured thigh bone can be sufficient to cause the bone to protrude through the skin.

What do you see:

- Life threatening bleeding (see page 68)
- Shock (see page 68)
- Severe swelling of the thigh
- Discolouration/bruising
- Possible open wound to the thigh
- Shortening and rotation of the affected leg

What should you do:

- Treat any life-threatening bleed
- If an assistant is available ask them to help by carefully holding the leg still at the ankle
- Bandage the wound using a pressure dressing
- Splint the full length of the leg from hip to ankle
- Bind the injured leg to the non-injured leg
- Check the airway and breathing
- Monitor and record vital signs
- Transport to immediate medical care
- If you need to move the person, the leg must be fully immobilized

Stabilising the leg

7.5 Crush Injury

A crush injury occurs when a large muscle, such as the thigh, is compressed or squashed by a heavy object or force. If you can free the injured person quickly, then treat their wounds normally. If there is an immediately life-threatening bleed, a tourniquet can be applied (see page 69).

If a large part of the body, such as the thigh or abdomen, has been crushed, complications can occur after around 30 minutes. In such cases it is important to transport the injured person to hospital without delay as soon as they are freed.

7.6 Arm and Lower Leg Injuries

(For injury to the femur/thigh - see page 90)

Arm Injury

If a person has damaged an arm or a leg, it is important that the limb is kept still. For a damaged arm, it is often best for the injured person just to hold it still rather than to put a splint or sling on. However, there are still times when a sling and/or a splint will be used, for example:

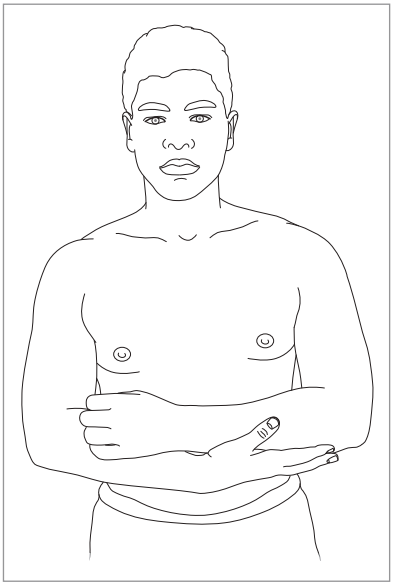
- If the injured person is going to be moved or transported in a vehicle
- To provide more comfort and pain relief
- To stabilise an injured limb

Arm Slings

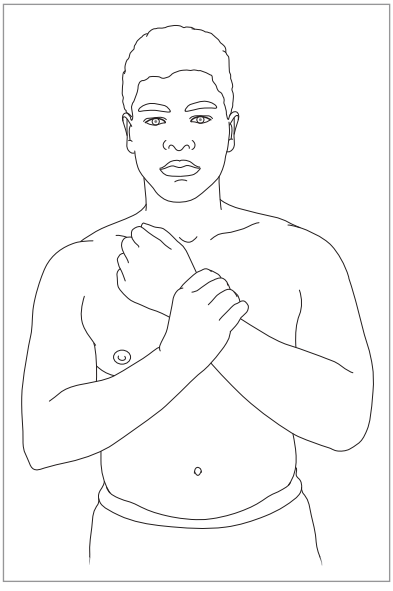
Since the injured person will normally hold their arm in the least painful position, this is where a sling should support it – do NOT try to move it. For severe damage, pad inside the sling or consider splinting the arm first.

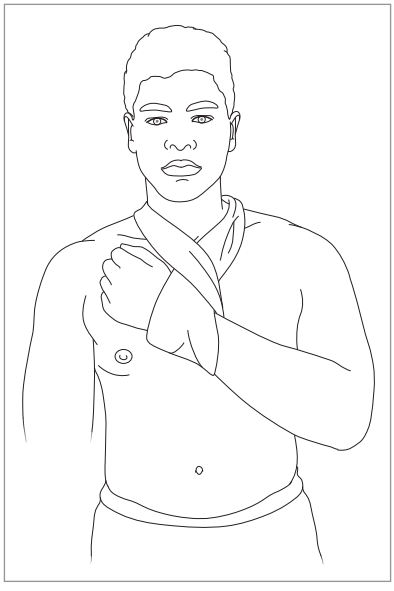
There are 3 types of sling that may be needed.

When the person is holding their arm across the body:

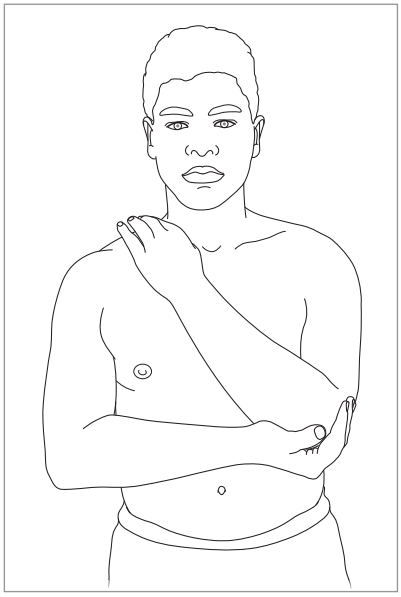


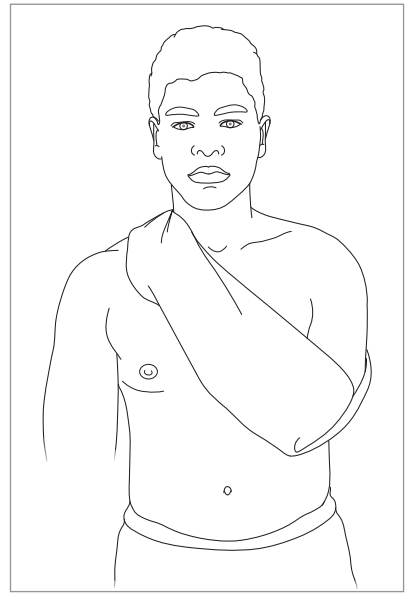
When the person is holding their arm by the wrist:





When the person is lifting their arm up by the elbow, with the hand on their opposite shoulder:





Splints

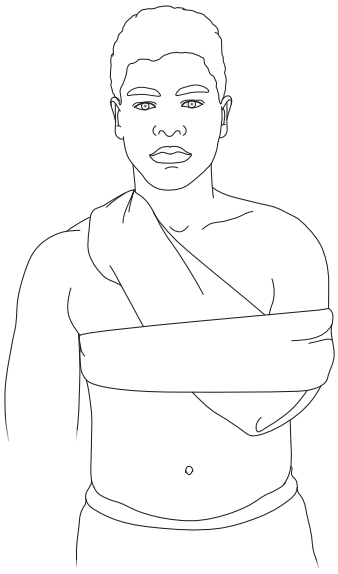
When applying a splint, remember what you are trying to do – provide support and comfort. This means:

- Taking your time
- Using plenty of padding and making sure the splint is properly secure
- Asking an assistant to carefully hold the arm or leg still while you put the splint on

What should you do:

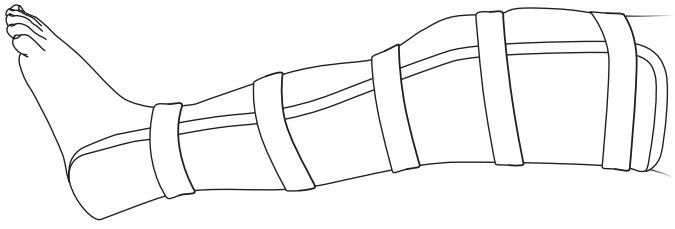
- **Arms**
  - For a lower arm injury, apply the splint along the length of the forearm
    - Do not straighten the arm if it is bent
  - When the splint is on, put the arm in a sling
  - For an upper arm injury, it is often better just to use a sling and to strap the arm to the body

Providing additional stability



- Legs
  - The splint should be long enough to go beyond the joints on either side of the injury
    - E.g. a lower leg injury should extend above the knee and below the ankle

Splints must immobilise joints above and below the injury



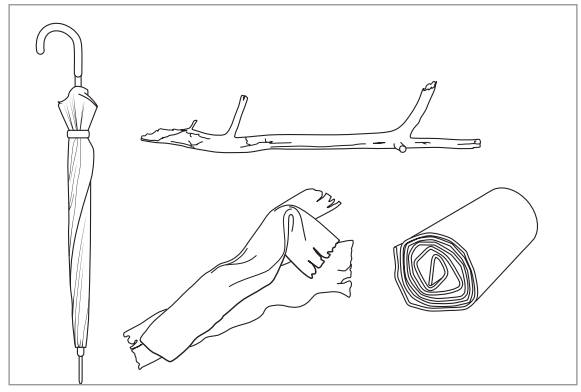
- **Joints**
  - For injuries to a joint and for dislocations, the splint must prevent the joint from moving and be as long as possible
- **Padding**
  - Use plenty of padding to ensure that the limb is not deformed by the splint and to avoid putting pressure on the injured area
  - Padding can be made from any soft clean fabric or other suitable material that is available

Improvised Splints

Commercial splints are available (e.g. vacuum splints and flexible aluminium splints) and you may need to assist the emergency medical services in applying these. However it is possible to improvise and make an effective splint using commonly found materials. You will need three things:

- Padding materials (e.g. pieces of cloth, bandages, etc)
- Something that is rigid (e.g. sticks, poles, rolled-up matting)
- Material to tie the splint together (e.g. torn-up pieces of cloth, bandages, etc)

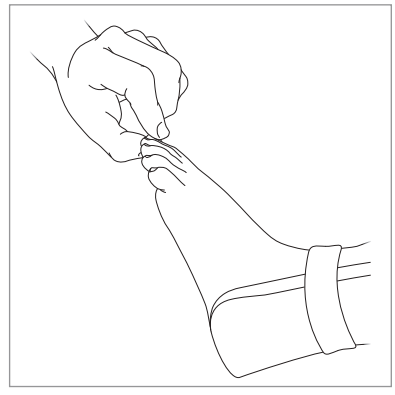
Examples of materials for improvised splints



Checking for Circulation

After applying a splint or a sling, check for circulation in the affected limb by gently squeezing the person's finger or toenail and confirming that the colour in the nail bed returns rapidly (within 2 seconds). If the colour is slow to return, try loosening the splint or sling to encourage more blood flow to the end of the limb.

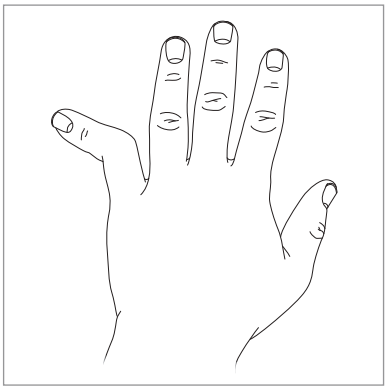
Checking for circulation



7.8 Dislocations

A dislocation occurs when a bone moves out of its normal position in a joint. These injuries can occur when the joint is moved in an awkward way such as during a fall.

A dislocated finger



What do you see:

- The joint is deformed (compare with the other side)
- There is limited movement of the joint
  - Ask the person if they can move the arm or leg

What should you do:

- Support the affected limb and joint in the most comfortable position
- Do NOT attempt to put the dislocated bone back in place as you may cause damage to the joint and surrounding nerves
- Arrange transport to medical care

7.7 Burns

Burns can be one of the most painful and distressing injuries. You need to provide calming reassurance as well as dealing with the physical injury.

- Severe burns can result in shock (see page 80)
- Even minor burns can lead to infection and the risk of scarring
- Inhaled hot gases can burn the throat and cause life-threatening breathing difficulties

If you are treating a person with burns, always be aware of potential dangers from the presence of hazardous chemicals or hot materials at the scene of the incident.

What do you see:

Burns are described as follows:

- **Superficial**
  - A burn that has only affected the surface of the skin
  - The skin is dry and darkened
  - The burnt area feels painful
- **Partial depth**
  - A burn that has gone deeply into the skin
  - The burn appears wet and red
  - There may be blisters with fluid in them
  - The injured person is in great pain
- **Full depth**
  - The heat has gone through the skin and into the tissue layers below
  - The skin may be charred
  - There may be no pain directly over the burn
  - There may be pain at the edges of the burn
  - Electrical burns are often full depth burns

What should you do:

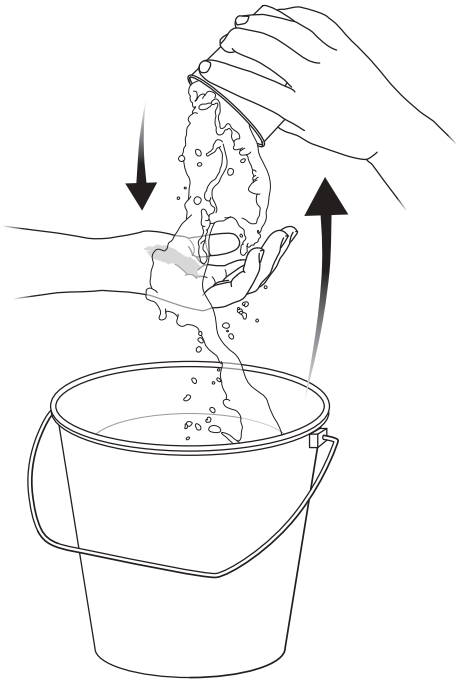
If the person is still on fire:

- If it is safe to do so, smother the flames with a cloth or blanket:
  - Do NOT use a synthetic material as it will stick to the person
- If the person is upright and the flames are around the upper body or head:
  - Immediately get them to lie down on the ground as low as possible
  - Smother the flames with a blanket or use whatever suitable material is available, or get them to roll on the ground
- Do NOT use anything that will melt or catch fire

Cooling

- Burns should be cooled with large amounts of water
  - Cool for a minimum of 10 minutes
  - If the person still feels pain, cool for a further 10 minutes and so on until the pain ceases
- The water should not be too cold
  - Do not give the person hypothermia
  - Keep the rest of the person warm
- Running/flowing water, is much more effective than still water
- If limited amounts of water are available
  - Recycle the water by catching it in a bucket and scooping it out again

Cooling a burn

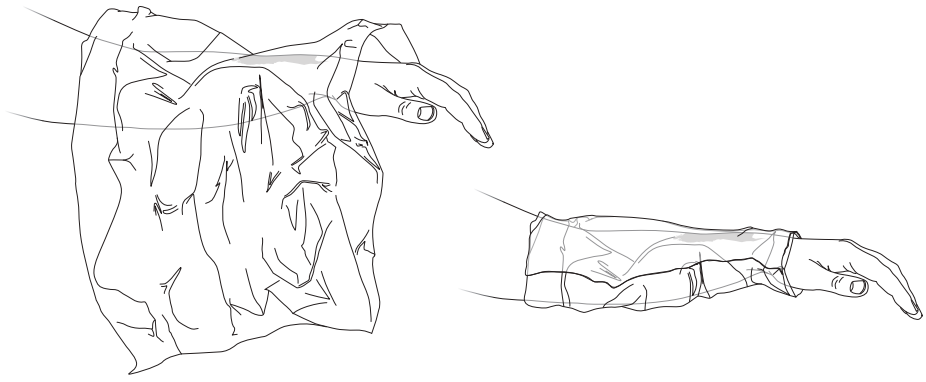


Dressing a burn

- After cooling
  - Remove any loose clothing, rings or bracelets quickly
  - Do NOT remove any material that is stuck to the burn
  - Scissors may be needed to cut around material that is stuck to the person

- Place a non-stick covering gently over the wound
  - For large areas, clean plastic food wrap, such as cling film, can be laid over the wound and wrapped loosely around the limb

Dressing a burn



- Do NOT bind the limb, as it will swell up

You can put cold liquid honey on the burn. This prevents infection and helps the wound to heal. Alternatively, you can also use aloe vera.

Fluids

- Allow the injured person to drink clean water unless they feel nauseous or start to vomit

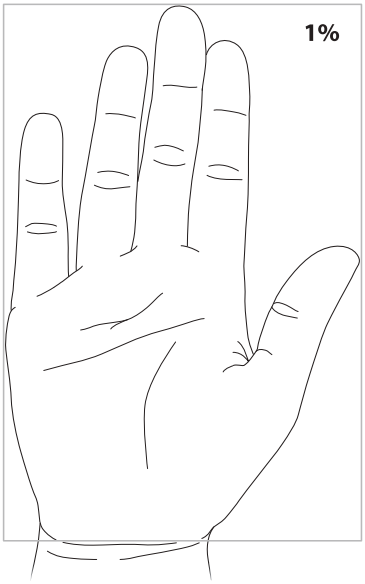
Shock

- A person with severe burns should be monitored and treated for shock and receive urgent medical care

Further medical care

A person who has been burned should be treated by a doctor if any of the following are present:

- The person shows signs of shock
- The person is in severe pain
- The burn is significant (i.e. more than a minor scald)
- Any surface burns covering more than 5% of the skin in total
- Any partial-depth burn that is larger than 1% of the skin surface
- Any burns to face, neck, hands, feet, groin



To decide how much of a person's skin has been burnt, use the palm of the injured person's hand as a guide. The palm and fingers of one hand equals 1% of the person's skin surface area.

A person's hand is 1% of their body's surface area.

Note: A burn that is slow to heal or shows signs of infection requires medical treatment.


South Sudan
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Response
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8 Road Traffic Incidents

Incidents involving cars, motorcycles and other vehicles are common. The type and extent of injury that people have after this type of incident is determined by:

- The speed of the vehicles involved
- Whether or not seat-belts were worn

8.1 Hazards and Safety

The scene of a road traffic incident is a hazardous area, with many dangers present. It is important to make sure that you and other people at the scene of the incident avoid further injury.

What to do when you arrive at a road traffic incident?

- If you arrive by vehicle:
  - Park safely, away from the incident
  - Put your hazard warning lights on
- Wear a high visibility vest or jacket
- If you have them, set up warning triangles on either side of the incident
- Check that it is safe for you to approach
- Look for:
  - Other road users
  - People near the vehicles
  - Leaking fuel/smoke (can you smell fuel?)
  - Broken glass
  - Sharp pieces of metal or plastic on the vehicle

- Make the area safe
  - Do not allow anyone to smoke near the vehicles
  - Turn off the ignition of any vehicles
  - Ensure vehicles have the handbrake on to stop them moving
- Be aware of airbags that have not deployed as a result of the crash, they may be triggered at any stage and cause injuries

8.2 Common Injuries

Multiple injuries are common in road traffic incidents. Each injured person may have a number of different wounds and there may be internal injuries that are not visible.

It is important to prioritise the most important injuries (ABC - Airway, Breathing, Circulation) and to monitor injured people in case their condition worsens.

Examples of the type of injury you may find at a road accident include:

- Head injury
  - E.g. caused by the driver's head hitting the windscreen
- Neck injury
  - E.g. caused by the head being thrown violently backwards and forwards
- Chest injuries
  - E.g. caused by hitting the steering wheel
- Internal bleeding
  - E.g. caused by the force of the impact
- Pelvic and thigh injury
  - E.g. caused by the legs being forced into the body or a sideways impact
- Lower leg injury
  - Often the feet and ankles are damaged
  - The driver's feet may be trapped by the foot pedals
    - These can usually be pulled upwards to free the feet
- Arm injury
  - Caused by the arms flying around during the incident

8.3 Removing a Helmet

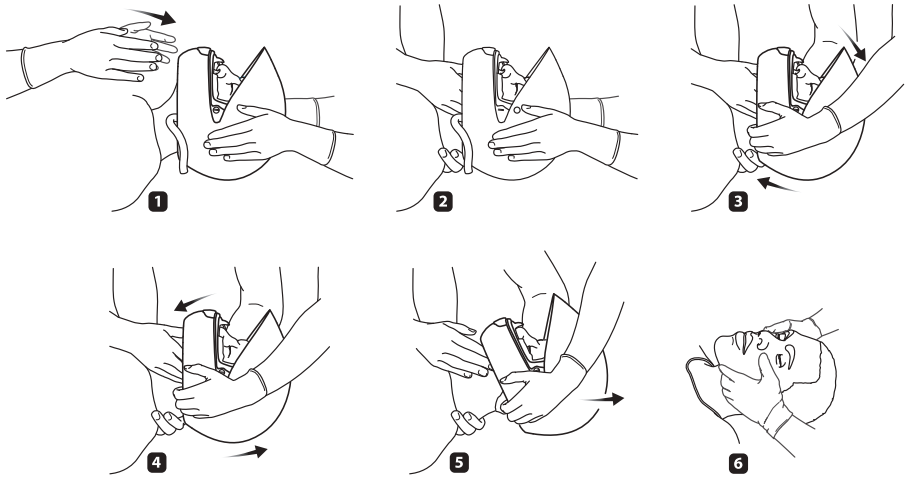
When to remove a crash helmet?

- If a person is unconscious after a motorcycle accident, and:
  - You cannot check their airway and breathing
  - You are going to move them onto a stretcher
  - You are going to transport them in a vehicle

What should you do:

- Kneel at the side of the injured person near to their head
- Undo or cut the chin straps
- Without moving the person's head
  - Ease the fingers of one hand under the back edge of the helmet and support the back of the person's neck – do NOT move the neck
  - Place your other hand on the lower jaw at the front
- Ask an assistant to kneel at the head of the person
  - Grip the helmet under the rim/edge at the sides
  - Gently tilt the helmet back without moving the head
  - Lift the front of the helmet clear of the chin/lower jaw
- Keep hold of the person's neck and jaw
  - Ask the assistant to tilt the helmet forwards slightly so the back of the helmet passes over the rear of the skull
- The assistant should now be able to slide the helmet off the person's head while you support its weight
  - Do NOT let the head drop to the ground suddenly
- The helmet may be a tight fit, be careful of the person's ears when removing it

Removing a motorcycle helmet



8.4 Removing a Person from a Vehicle

When to remove someone from a vehicle?

- For their own safety
- To provide treatment that cannot be given while they are in the vehicle
- To transport them to a medical facility

Note: In most cases, it is safer for the person to stay in the vehicle until assistance from other emergency services arrives.

Accessing a vehicle

- Take care before opening doors, as the injured person may be leaning against it
- You may need to use the boot/trunk to access the back seat
- Be aware of airbags that have not been deployed, as they may be unstable

What should you do:

If the person is conscious:

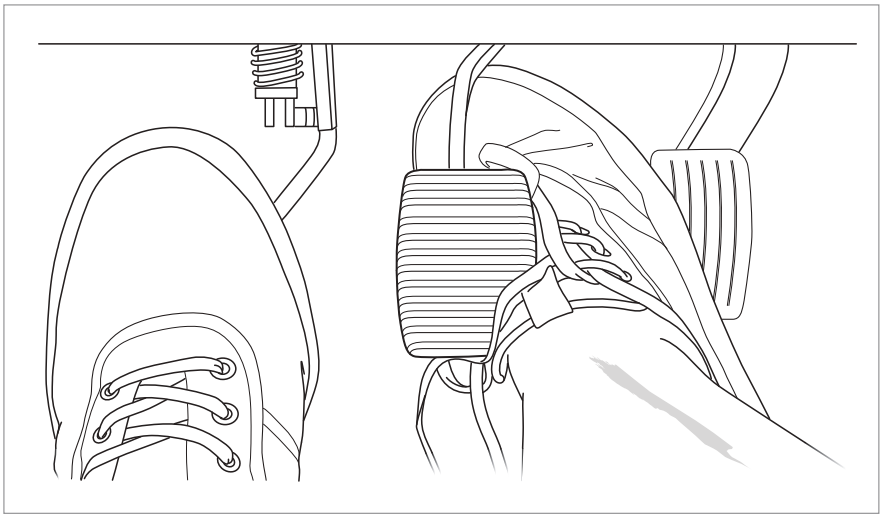
- If their injuries allow, the easiest and safest thing to do is to ask the person to get themselves out of the vehicle
- If they need assistance, get them to turn in the seat and put their feet on the ground
  - Provide support as they stand up
- If they are unable to get out, proceed as for an unconscious person (see below)

If the person is unconscious or too badly injured to move themselves:

There is no single method for extracting a person from a vehicle only practice and experience can tell you what will be effective. Before attempting to extract a person from a vehicle, consider the following:

- Is the person trapped by any part of the vehicle?

  Check that the driver's feet are not trapped



- Can you move them by yourself or do you need help?
- Where will you put them:
  - On the ground?
  - On a stretcher?
  - On a blanket?

- What other dangers are there?
  - E.g. airbags
  - E.g. sharp edges
  - E.g. broken glass
- Is there any other equipment available to assist you?

Extracting a person from a vehicle

- If possible, get a helper to enter the opposite side of the vehicle and help support the injured person and protect their head as they are extracted

Extracting a conscious person from a vehicle

- Have people stand on either side of the injured person
- Slowly move the person, feet first, out of the vehicle
- If possible, place the person directly on to a stretcher
- Avoid having to move them more than once

Moving a person onto a stretcher

Note: Devices such as spine boards and neck-collars ('c-collars') may be used to assist with the extraction/removal of injured people from vehicles. However, once the person is safely removed, they should be transferred to a soft, padded surface as harm may be done if they remain on the board or with the c-collar in place.

Note: The use of spine boards and neck-collars requires further training.

9 Common Illnesses and Diseases

As a First Responder you may be called to assist people who have become ill from an infection or who are suffering from a medical disorder. This may include serious illnesses such as stroke, heart attack or an extreme allergic reaction.

Remember, only a doctor will decide what specific illness or infection a person is suffering from. Your role is to recognise the signs and symptoms of illness (e.g. a fever, headaches, coughs, etc) and to understand that these may be consistent with particular diseases. You should not tell the ill person what is wrong with them.

For example:

- It is okay to say:
  - 'You have a high fever and need to see a doctor'
- You should NOT say:
  - 'You have tuberculosis and need to see a doctor'

In all cases of suspected infectious disease, get further medical advice on what to do if you are not sure if you are concerned about the ill person.

This chapter covers some of the more common illnesses and conditions you may come across.

9.1 Your Safety

Infectious diseases are common, and some are more serious and easily transmitted than others. You may be required to provide care to an ill person with an infectious disease. There are some common precautions you can take to avoid infection yourself:

- Always wash your hands before and after treating any ill or injured person (see page 19-20)
- Wear gloves and, if necessary, other protection such as glasses, a face shield and overalls
  - If gloves are not available, clean plastic bags may be worn over the hands instead

- Safely dispose of contaminated items – gloves, dressings, etc.
- Ensure that you have preventive vaccinations where possible
- For some diseases, such as haemorrhagic fever, always wear full personal protective equipment before coming into contact with the ill person

Note: If you think you may have been exposed to an infectious disease while treating an ill person or if you feel unwell within a few days of coming into contact with an ill person, it is important that you see a doctor as soon as possible.

Note: If you are involved in transporting a person with an infectious disease, you should seek advice from a suitably qualified person on ways to prevent spreading the infection and on a suitable place to take the person for treatment.

9.2 Diseases

Cholera

Cholera is a bacterial infection that can be spread through contaminated water, shellfish and raw food. It is spread from person-to-person by poor hygiene (e.g. not washing your hands after going to the toilet) or indirectly by contaminated food or water. Cholera takes between 1 and 5 days to develop. Due to the onset of rapid and severe dehydration, death can be rapid (within 24 hours).

Cholera outbreaks are more likely to develop in areas with poor sanitation and hygiene, and after disruptive events such as flooding, where basic services have been damaged or destroyed.

What do you see:

- Excessive watery diarrhoea ('rice water' stools)
- Vomiting
- Fever
- Dehydration
  - Sunken eyes, loss of skin elasticity
- Signs of shock (see page 85)
- Urine output reduced or non-existent
- (No blood in stools)

What should you do:

- If you suspect a person has cholera, seek medical help immediately
  - Always report suspected cases of cholera
- Ensure you are safe by wearing gloves and an apron
- Isolate the ill person
- Allow the person to rest
- Treat for fever
- Give fluids
  - Water and oral rehydration solution
  - Frequently in small amounts
- Monitor their vital signs

Prevention

- Good hand hygiene is essential to prevent the spread of cholera
  - Encourage frequent handwashing with soap and clean water
  - Insist that people wash their hands after using the toilet
- When in contact with someone with cholera, always wear gloves and an apron
- In the case of a cholera outbreak, always follow emergency public health advice to help reduce the spread of the disease

Tuberculosis

Tuberculosis (TB) is the most common bacterial infection in the world. It is transmitted through the air, such as when people cough, sneeze, speak or laugh. You cannot become infected by shaking hands, using the toilet or sharing dishes, etc., with an infected person.

Infection typically involves the lungs. The person is more at risk if they already have HIV or are malnourished.

What do you see:

- Chronic (long-term) productive cough lasting weeks, and:
  - Malaise, tiredness and fatigue
  - Weakness
  - Wasting
  - Fever and night sweats

What should you do:

- Seek medical advice
  - The ill person needs medication to treat the disease
- Treat for fever
- Monitor their vital signs
- Encourage the person to use any medication that a doctor gives them to take
  - You may be asked by the doctor to make sure the person takes their medication

Prevention:

- Tuberculosis can be prevented by having the BCG vaccine
- Avoid drinking unpasteurised milk

Malaria

This is a disease caused by a parasite that is spread by infected mosquitoes. It is commonly found in Africa. There is no vaccine for malaria, so it is controlled by taking steps to avoid being bitten by mosquitoes.

What do you see:

- The first symptoms appear about 7 days after being bitten by an infected mosquito
- There are common stages in the development of malaria. However, these are not always clearly separated:
  - Cold stage – shivering and temperature peaks
  - Hot stage – feeling hot, flushed with high temperature
  - Wet stage – drenched in sweat and temperature falls
- Fever
- Coughing
- Headache
- Tiredness
- Painful muscles
- Abdominal pain, nausea
- Dizziness, loss of appetite

What should you do:

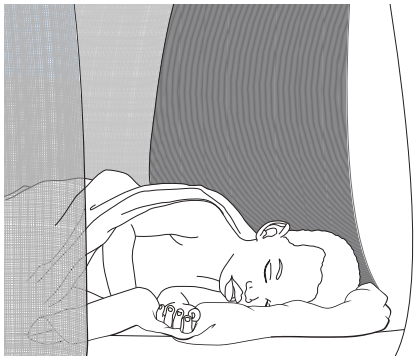
- Seek urgent medical advice for testing and treatment
- Ensure the ill person rests
- Treat for fever
- Give oral fluids
- Monitor the vital signs

Prevention

Mosquito bites can be avoided by following these rules:

- Sleep under mosquito nets
- Keep the home environment clean
- Remove waste that contains water
- Avoid having stagnant or standing water near to homes
- Wear long clothes and keep feet and ankles covered
- Stay indoors between sunset and sunrise
- Use insect repellents if they are available

Sleep under mosquito nets



Keep ankles and wrists covered

Dengue Fever ('Breakbone Fever')

This virus is spread by bites from infected mosquitoes. It is commonly found in Africa and is a frequent cause of illness in affected regions. There are four types of dengue virus. A person who has been infected by one virus is still vulnerable to infection from the others.

What do you see:

- Mild Illness
  - The first symptoms appear within about **two weeks** of infection
  - Symptoms last 2-7 days
  - Headache
  - Rash
  - Fever
  - Severe aches
    - E.g. pain behind the eyes
    - E.g. sore muscles and joints
    - E.g. a feeling of aching bones
- Severe Illness
  - About 5 percent of people infected with the Dengue virus will become seriously ill
  - Symptoms of severe illness often occur 1-2 days after the fever has eased
    - Stomach pain/tenderness
    - Vomiting – 3 or more times in 24 hours
    - Feeling tired, restless or irritable
    - Bleeding from the nose or gums
    - Blood in vomit or stools

What should you do:

- Mild illness
  - Advise the ill person to rest
  - The person may choose to take paracetamol (acetaminophen) to relieve the symptoms
    - They should NOT take aspirin or ibuprofen
  - Advise the ill person to drink plenty of fluids
- Severe illness
  - The ill person requires immediate medical care

Prevention:

Dengue is prevented by avoiding mosquito bites:

- See the notes on malaria for advice on avoiding mosquito bites
- To reduce the spread of the disease, people in the same household as a person infected with Dengue fever should take extra care to avoid mosquito bites
- A vaccine is available but should NOT be given to people who have not previously been infected by the Dengue virus

Meningitis

This is an infection that affects the brain and spinal cord. It is most common in children under 5 years old. It is a very serious disease. Early detection is very important but the symptoms can often be confused with milder illnesses such as influenza (flu) or a stomach upset. The disease is more likely in areas with overcrowding and poor hygiene.

Meningitis can usually be treated by medication but the person may suffer severe after-effects.

What do you see:

Meningitis is associated with a rash on the skin; however, if someone is ill and their condition is worsening, do not wait until you see a rash to get help.

- Sudden onset of:
  - Intense headache
  - Fever – sometimes with cold hands and feet
  - Nausea or vomiting
  - Neck stiffness
  - Sensitivity to bright light
  - Symptoms often include a distinctive rash
  - The rash does not go pale when pressed on with a glass (see image below)
- Diarrhoea
- Muscle pain
- Stomach cramps
- Sleepiness and difficulty in waking
- Seizures

The glass test: a meningitis rash does not disappear when a glass is rolled over it

What should you do:

- Seek medical advice without delay
  - The ill person needs medical care
- Treat for fever
- Monitor and record vital signs

Prevention:

- Prevention is by meningitis vaccination
- If there is an outbreak of meningitis in your region, advise people to stay away from crowded places

Measles

Measles is a highly contagious disease spread by coughing and sneezing. Unvaccinated young children and unvaccinated pregnant women are most at risk.

Measles outbreaks commonly occur after a disaster where the infrastructure and health services have been damaged. It is also common in areas of poverty and malnourishment.

What do you see:

- The first sign is a fever that lasts 4-7 days
- Fever with a high temperature
- Coughing and sneezing (runny nose)
- Red, watery eyes
- Small white spots inside the mouth
- After several days, a rash develops
  - Flat, red spots on the skin
  - Starting on the head and face
  - Spreading down the body over several days

What should you do:

- Treat for fever
- Monitor the vital signs
- Ensure good fluid intake to avoid dehydration
- Seek medical advice immediately

Prevention:

- Prevention is by vaccination
- Isolate the infected person from other people until at least 4 days after the rash appears
- Family members should avoid contact with other vulnerable people

Tetanus

Tetanus is a bacterial infection that enters the body via a wound and then spreads to the nervous system.

What do you see:

- The disease can take about a week to develop
- Lockjaw - the person is unable to open their mouth or grin
- Spasms in the neck, chest, abdomen and limbs
  - These may last several minutes
  - Are painful for the affected person
  - May affect breathing

Sometimes symptoms are limited to the area around the wound.

What should you do:

- Clean wounds with clean water
- Rest in a quiet, dimly lit environment
- Avoid unnecessarily touching the affected person
  - This may cause them to have spasms
- Monitor the vital signs
- Seek medical assistance
  - The ill person requires medical care

Prevention

- Prevention is through vaccination
- Clean wounds thoroughly immediately after injury

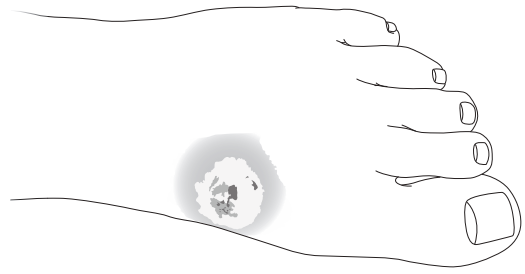
Trypanosomiasis (Sleeping Sickness)

Trypanosomiasis, better known as 'sleeping sickness', is spread by the bite of the tsetse fly. There is little risk of the disease in urban areas.

What do you see:

- A small ulcer or red swelling may appear at the site of the tsetse bite
- Recurring episodes of fever
- Headache
- Itchy skin rashes
- Joint pains
- Behavioural changes
- Irritability
- Irregular sleeping
  - Often asleep during the day and awake at night
- Sleepiness, leading to unconsciousness

Bite from a tsetse fly



Note: Sleeping sickness can be similar to malaria in its early stages.

What should you do:

- Seek medical advice immediately
- Treat for fever
- Monitor vital signs

Prevention

- There is no preventive medicine available
- Wear light-coloured clothing
  - But NOT blue, as this attracts the tsetse fly
- Use insect repellents
- Sleep under mosquito nets

Typhoid Fever

Typhoid is spread by contaminated water and food. Poor hygiene such as failure to wash hands after going to the toilet or before preparing food is the main cause of contamination. The disease takes about 7-14 days to develop after a person is infected.

What do you see:

- Fever
- Headache
- Tiredness, fatigue
- Abdominal discomfort/pain, constipation or diarrhoea
- Rash on chest, abdomen
- Coughing
- Sore throat
- Nosebleed
- Slow pulse rate
- Shock
- Unconsciousness

What should you do:

- Ensure the ill person rests
- Treat for fever
- Give oral fluids
- Monitor the vital signs
- Seek medical advice for treatment

Prevention

- Follow strict food and water hygiene practices
  - Always wash hands with soap and clean water before handling food
- A vaccine is available

Viral Haemorrhagic Fever

Viral Haemorrhagic Fever (VHF) refers to a group of illnesses that includes Lassa fever, Ebola, Marburg and Rift Valley fever. Infection is caused by contamination with infected blood, other body fluids and sexual contact. Viral Haemorrhagic Fevers are more common in rural areas.

What do you see:

Lassa fever

- Fever
- Sore throat
- Inflammation around the eyes
- Chest pain
- Abdominal pain

Ebola and Marburg

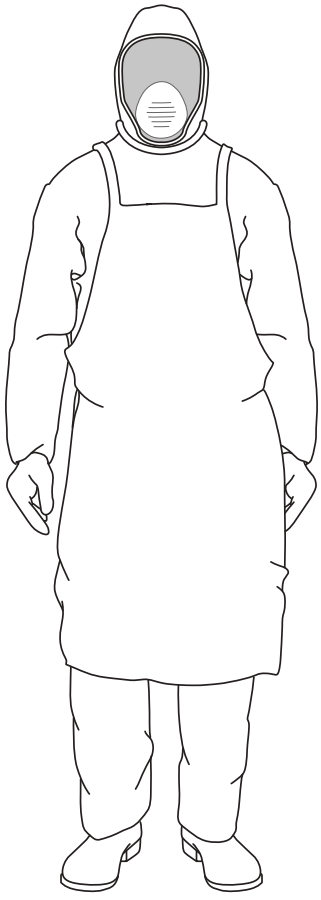
- Sudden onset of fever
- Abdominal pain
- Sore joints
- Eye redness
- Diarrhoea
- Bleeding under the skin (bruising)
- Bleeding from nose
- Blood in the stools
- Shock

What should you do:

- **Notify the health authorities immediately** if you suspect Viral Haemorrhagic Fever
- Ensure that the affected person does NOT come into contact with other people until they have been seen by a doctor
- Use eye protection, a mask to cover your mouth, gloves and an apron
- Avoid coming into contact with any body fluids (blood, urine, saliva, etc)
- Treat for fever
- Give oral fluids
- Monitor the vital signs

Note: When a case of Viral Haemorrhagic Fever is suspected, it is important to limit the spread of the disease and identify others who may be infected.

Personal protective equipment for Viral Haemorrhagic Fevers



Prevention

- Carefully follow the advice of the medical services when treating affected people
- Lassa
  - Ensure effective rodent control by removing rubbish and other food sources
- Ebola and Marburg
  - Avoid contact with bats and monkeys

Yellow Fever

Yellow fever is a Viral Haemorrhagic Fever. It is spread by the Aedes mosquito. You cannot contract Yellow Fever from other humans. The fever appears about 3-6 days after infection.

What do you see:

- Fever
- Headache
- Photophobia (avoiding bright light)
- Backache, painful limbs and knee joints
- Nausea, vomiting (may be black)
- Slow heart rate
- Late signs include:
  - Jaundice
  - Shock
  - Coma

What should you do:

- Give oral fluids
- Treat for fever
- Monitor the vital signs
- Seek medical advice

Prevention

- A Yellow Fever vaccine is available
- Control the mosquito population
  - E.g. spray with suitable insecticides
  - E.g. remove stagnant or standing water from the vicinity of homes
- Sleep under mosquito nets

9.3 Common Illnesses

This section contains information on the following conditions:

- Asthma
- Heart attack
- Seizures
- Febrile convulsions
- Stroke
- Diabetes
- Allergic reaction and anaphylactic shock
- Poisoning
- Mental well-being and illness
- Temperature-related illnesses
- Pregnancy and childbirth

Asthma

Asthma (pronounced ass-ma) is a respiratory disease that is becoming more common in urban areas of Africa. As a First Responder you may be called to someone with breathing difficulties and asthma could be a possible cause.

There are some known triggers for an asthma attack, such as dust mites, animal fur, pollution, tobacco smoke, exercise, respiratory infection or an allergy.

People who suffer from asthma will often carry an 'inhaler'. It is important that the correct inhaler is used to relieve an asthma attack.

What do you see:

- Difficulty breathing
- Wheezing
- Difficulty speaking
- Coughing
- Distress and anxiety
- Blueness around the lips

Levels of asthma severity

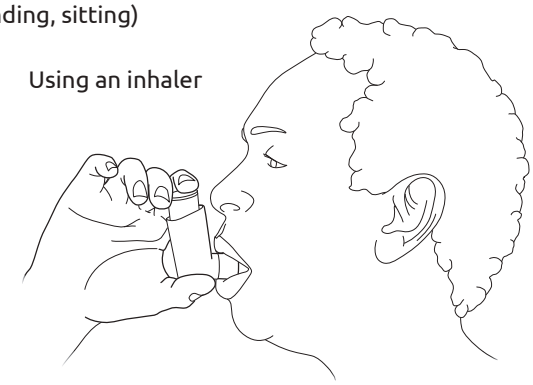
- **Mild**
  - Short of breath
  - Can speak in full sentences

- **Moderate**
  - Short of breath
  - Loud wheezing
  - Speaking only in short sentences with each breath
- **Severe**
  - Very short of breath
  - Wheezing may be quieter
  - Can only speak a few words per breath
- **Immediately life-threatening asthma**
  - Extremely short of breath
  - Ineffective breathing
  - May only be able to speak a word or two

What should you do:

- General Treatment
  - Provide calm reassurance
  - Seek urgent medical assistance and transport
  - If the person has an inhaler, help them to use it
  - Ensure that the person:
    - Breathe out as much as possible before inhaling
    - Form a seal around the mouthpiece with their lips
    - Lift their chin slightly before inhaling
    - Operate the inhaler as they begin to breath in
    - Hold their breath for as long as possible after inhaling
    - Wait 30-60 seconds between each use of the inhaler
  - Allow the person to find a position that they are most comfortable in (e.g. standing, sitting)

Using an inhaler



- Severe and Life-threatening asthma
  - Monitor the vital signs
  - Arrange urgent transport to medical care
  - If the ill person becomes unconscious, put in the recovery position

See appendix III for information on how to use an inhaler and how to make an improvised spacer to help the person take the medication effectively.

Heart Attack

A heart attack is caused by a sudden blockage of the arteries supplying the heart muscle. The affected area of heart muscle will be damaged. In severe cases the heart can stop beating and the person will suffer cardiac arrest and require immediate basic life support (see chapter 4).

Chest pains

What do you see:

- The clearest signs of a heart attack are:
  - 'Crushing' central chest pain, that may spread to the neck and jaw
  - Pain in the shoulder(s) and/or down one or both arms
  - Pain in the jaw
  - Lots of sweating
- Other signs include:
  - Shortness of breath, gasping for air
  - Feeling nauseous – as if going to vomit
  - Pain in the abdomen
  - Sudden fainting or dizziness
  - Blueness of the lips
  - An ashen or grey tone to the skin
  - Rapid, weak or irregular pulse
  - Feeling anxious and afraid

What should you do:

- Seek immediate medical help
- Ask the person:
  - Do they have medication for a heart problem?
  - Are they allergic to aspirin?
- If they are not allergic to aspirin:
  - Explain that aspirin is of benefit to people having a heart attack
  - Invite them to take a standard (adult dose) aspirin
    - This should be at least 325mg of aspirin
  - Tell them to chew the aspirin thoroughly before swallowing
- Ensure the person is sitting or reclining
- Make them comfortable and provide support
- Do NOT allow them to walk
- Monitor their vital signs
  - If the person collapses and becomes unconscious, treat as for an unconscious person (see chapter 2) and be prepared to give basic life support (see chapter 4).
- Arrange for transport to medical care

Seizures

A seizure is caused by abnormal electrical activity of the brain. There are several causes for a seizure and in children they are often associated with a high fever. Seizures can also be due to epilepsy, head injury (see page 83), alcohol, drugs or poisoning.

Seizures may also be referred to as 'epilepsy', 'fits' or 'convulsions'.

What do you see:

- Just before the seizure
  - the person may experience a warning symptom
    - E.g. a strange feeling, smell or taste
- During the seizure
  - Sudden loss of consciousness
  - The person appears stiff and rigid

- The person arches their back
- Convulsive, shaking movements
- Clenched jaw
- Incontinence
- Lips or nail beds may become blue or grey

- After the seizure
  - The person may feel tired and fall into a deep sleep

What should you do:

- When the seizure begins
  - Note the time when the first signs of the seizure start
- During the seizure prevent the person from hurting themselves
  - Move furniture out of the way
  - Clear the space around them
  - Place something soft under their head (e.g. clothing or a pillow)
  - Do NOT:
    - Put or force anything into their mouth
    - Try and restrain them during the seizure
- After the seizure
  - Place the ill person in the recovery position, and stay with them whilst they are sleeping
  - Monitor their vital signs
  - When they recover provide reassurance
- Seek urgent medical assistance if:
  - The person has a second seizure without fully recovering from the first one
  - If the cause of the seizure is a head injury or poisoning
  - If the seizure lasts longer than 5 minutes
  - If this is the first time the person has had a seizure

Febrile Convulsions

A child under five years old with a fever may have a seizure (see above). These seizures are usually harmless.

What do you see:

- The child arches their back and appears stiff and rigid
- The arms and legs may twitch
- The child may vomit
- The child's eyes roll upwards

What should you do:

- Remain calm
- Remove the child's clothes and any warm bedding
- Put the child in the recovery position
- If the seizure lasts for more than 5 minutes, seek medical advice
- If the child has more than one febrile convulsion, seek medical advice

After the febrile convulsion, the child is likely to sleep normally.

Stroke

A stroke or 'cerebrovascular accident (CVA)' is a condition where part of the brain does not get enough oxygen due to a blood clot or bleed in the blood vessels in the brain.

What do you see:

The signs of a stroke vary depending on which part of the brain is affected. Signs may include:

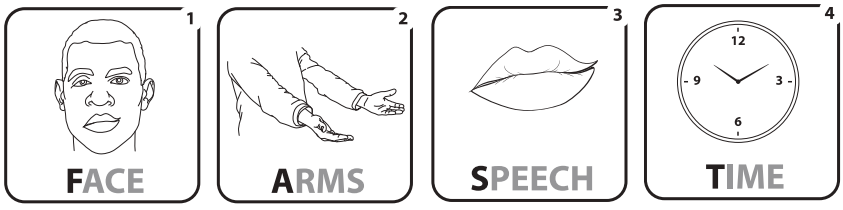
- Facial weakness
- Inability to smile
- The mouth or an eye droops
- Weakness or numb feelings
- Difficulty speaking
  - E.g. slurred speech
- Dribbling from one side of mouth

- Inability to move a limb or limbs on one side of the body
- Dizziness or loss of balance
- Loss of vision
- Blurring of the vision in one eye
- A sudden headache

What should you do:

- Use the FAST (Face – Arm – Speech – Time) guide if you suspect a person has had a stroke
  - **F – Face** – is their face drooping on one side, can they smile?
  - **A – Arms** – is one arm weak, can they raise both arms?
  - **S – Speech** – is their speech slurred, muddled, can they speak?
  - **T – Time** – time to seek immediate medical assistance

The FAST test



- Seek urgent medical assistance
- Sit the person down
- Reassure and keep them calm
- Monitor the vital signs
- If the person becomes unconscious, put them in the recovery position

Diabetes

People with diabetes have difficulty controlling the level of glucose (sugar) in their blood. They may have to control this with a special diet or through medication. Many kids and adults in Africa are unaware they have the condition.

Too much sugar in the blood is called ‘hyperglycaemia’. The most common diabetic emergency is too little sugar in the blood (‘hypoglycaemia’), so the information in 'what do you see' and 'what should you do' below is about this condition.

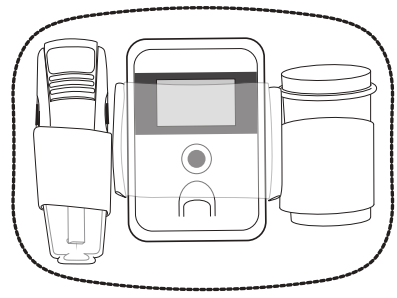
What do you see:

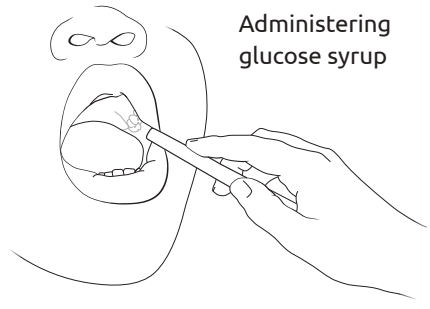
- The ill person may be able to tell you they are diabetic
- The person is sweaty/damp
- Unusual behaviour
- Confused, irritable, combative
- Weakness, hunger or faintness
- Shallow breathing
- Rapid pulse
- Headache, blurred vision, dizziness
- Decline in consciousness/responsiveness

What should you do:

- Sit or lie the person down
- If you have the equipment, are trained and legally permitted to do so, test for blood glucose levels
- If they are conscious and able to swallow:
  - Give them glucose tablets (15-20 g), sugary drink or other sugary food
  - Provide more sugary food every few minutes until they start to recover
  - Provide more substantial food including bread, jam, cheese, etc
- If the person is confused or drowsy but can still swallow:
  - Try to put a sweet syrup or paste on the inside of their gum (e.g. jam)
- If their consciousness is impaired:
  - Do not give them anything to eat or drink
- Monitor their vital signs
- Seek urgent medical assistance if there is no improvement in the person's condition
- If the person is unconscious:
  - Arrange for immediate transport to medical care

Blood glucose testing kit





Administering glucose syrup

Allergic Reactions and Anaphylactic Shock

An allergic reaction occurs when the body over-reacts to something that is not usually harmful. People can be allergic to different things, for example, stings from insects, certain types of food (e.g. eggs, nuts, shellfish) and some medicines.

In many cases, allergic reactions cause only minor irritations such as runny eyes and nose or small patches of itchy skin. However if the body's reaction is very strong, the allergic reaction can lead to anaphylactic shock. This is a life-threatening type of shock (see page 80) that requires urgent treatment.

What do you see:

The symptoms of an anaphylactic reaction can vary with different people. They may include:

- Mouth and throat
  - Swelling of the lips and tongue, itchiness, difficulty swallowing
- Skin
  - Swelling, redness, itchiness, a rash
- Eyes
  - Redness, runny eyes ('crying')
- Stomach
  - Feeling sick, vomiting, diarrhoea
- Breathing
  - Difficulty breathing, wheezing, coughing
- Heart Rate
  - Increased rate and/or irregular heart beat
- Emotions/Feelings
  - Feeling weak, faint or anxious
- Level of Consciousness
  - Falling levels of consciousness/responsiveness

What should you do:

- Seek immediate medical assistance
  - Anaphylactic shock is a medical emergency
- Provide rest and reassurance
- Monitor vital signs
- If the person has an adrenaline auto-injector, help them to use it
- If the person is unable to use their auto-injector, administer it for them, if:
  - You are trained to use it and
  - You are legally permitted to do so
  - Use only the affected person's auto-injector
- Treat for shock (see page 80)
- Arrange for immediate transport to care
- See appendix III for guidance on using an adrenaline auto-injector

Poisoning

When treating a suspected case of poisoning, always consider your own **safety**. Do not become another victim by coming into contact with the poison yourself.

Poisons can be man-made, such as industrial chemicals, household cleaners or medicines, or occur naturally such as poisonous plants. Poisons can be taken into the body in four ways:

- Swallowed (ingested)
- Inhaled though the nose or mouth
- Injected through the skin
- Absorbed through the skin

The treatment for poisons differs depending on the poison involved. Your country may have a poisons advice centre that you can call for advice on what to do.

What do you see:

Different poisons and substances will react in different ways on the body. Signs can appear immediately or be delayed. Here are some common signs and symptoms of poisoning:

- Nausea and vomiting
- Abdominal pain
- Seizures
- Reduced level of consciousness
- Headache
- Pupils - very large or very small
- Rash, redness, itching of the skin
- Difficulty breathing
- Irregular heart rate
- Blueness / greyness to lips
- Sweating
- Blurred vision

What should you do:

- Consider your own safety
  - Wear gloves, apron, goggles, a face mask as necessary
  - Stay upwind of the source of contamination
  - Be aware of poisonous gases that you cannot smell
- If poison is on the skin:
  - Wash the skin with lots of cold water
- If the eyes are affected by poison:
  - Irrigate the eyes for 10 minutes with clean water
- If the person has inhaled a poisonous gas:
  - Move them to where the air is clean
- If the person has a chemical irritation on the mouth or lips:
  - Get them to rinse their mouth and lips with small sips of clean water, they should not swallow the water
- Remove any contaminated clothing
- Do NOT induce vomiting

- If the person becomes unconscious:
  - Place in the recovery position on their left side, and:
    - Monitor breathing and other vital signs
    - Be prepared to commence CPR
    - Use compressions only (no rescue breaths)
- If the person is conscious:
  - Monitor the person's vital signs
  - Place in the recovery position, on their left side
- Seek medical advice and assistance
- If there is a container with the poison in it:
  - Handle with care (wear gloves)
  - Note the name of the poison or take the container to hospital with the affected person if it is safe to do so

Mental Well-Being and Illness

Mental well-being includes:

- Being free from unnecessary distress or worry
- Feeling able to trust someone who is caring for you
- Feeling connected to other people, such as family, friends and other welfare providers

Mental health problems

Many people suffer from mental health problems at different times in their lives. These illnesses are no less real than physical problems although they are often misunderstood and associated with a lot of prejudice or negative stereotypes within the community.

Mental health problems are sometimes referred to as mental health 'crises' or 'episodes'. Some examples include:

- **Depression:** A prolonged period of feeling hopeless or sad that is also associated with disturbed patterns of sleep, feelings of irritation, low self-esteem, difficulty concentrating and feeling excessively tired.
- **Mania:** A condition of being overly excited or agitated. The affected person may talk very rapidly and jump from one idea to another without apparent reason and be extremely active (hyperactive).
- **Suicidal thoughts and behaviours:** Thinking regularly about ending one's life or actually making attempts to do so.

- **Post-Traumatic Stress:** A reaction to a stressful event that may occur many weeks or months after the event. Signs and symptoms vary between individuals and may include physical problems (e.g. difficulty sleeping, stomach upsets or headaches), emotional disturbance (e.g. feeling angry, helpless or anxious) and mental upset (e.g. difficulty concentrating or making decisions).

As a First Responder, you are NOT responsible for providing counselling or therapy to a person with a mental health problem. However, it is important that you recognise and accept their problem as a real illness and ensure that the affected person is treated with the same respect as any other ill person and is referred to the appropriate care provider. Some mental health problems may be caused by an underlying physical illness and only a doctor will be able to confirm this.

You may be able to encourage family and friends of the affected person to view the problem as an illness. Ask them to provide support and to protect the person from abuse. In this way, you will be challenging the fears that many others have about mental health problems and reducing the stigma that is often associated with this type of illness.

What should you do:

If you think someone has a mental health problem:

- Consider your own safety
  - Is the person likely to be aggressive or do anything that could put you in danger?
- Do NOT make judgements about the person's condition
- If the person wants to talk with you:
  - Show that you are listening
  - Avoid making judgements or giving opinions
  - Acknowledge the problem as real for the person affected (do NOT try and dismiss it as unimportant or mistaken)
- Ensure that the person is referred to a suitable care provider
- Ensure that the person is treated respectfully by those around them by explaining that the problem is caused by an illness

Heat-Related Illness (Hyperthermia)

Heat-related illness is due to the body overheating and may be caused by exercising or working in warm conditions. Even people who are used to living in hot climates can suffer from over-heating.

If left unmanaged, heat-related illness worsens and can suddenly become a life-threatening condition. It is better to rest, cool and re-hydrate (give liquids to) the person before they become extremely hot and in need of rapid cooling to prevent loss of life.

What do you see:

- Headache, dizziness, confusion
- Nausea
- Strong pulse
- Cramps in the arms, legs or abdomen
- Increasing pulse and breathing rate
- Restlessness
- Hot and dry skin
- Rapid loss of consciousness
- Body temperature above 40 Celsius (severe heat illness)

What should you do:

Mild over-heating

- Rest the affected person
- Remove them from the source of the heat
  - E.g. place them in a shaded area
- Give water (and oral rehydration fluids if available)
- Advise against further exercise for 24 hours

Severe over-heating

- Rest the ill person in the shade
- Remove all clothing
- Cool rapidly
  - E.g. place cool, wet towels on the person (replace regularly)
  - E.g. pour cool water on them (but do NOT immerse in water)
- Monitor their vital signs
- Give water (and oral rehydration fluids if available)
- If the person becomes unconscious put them in the recovery position
- Seek urgent medical assistance and transport to medical care

Cold-Related Illness (Hypothermia)

A person whose body temperature falls too far is said to be 'hypothermic'. This is a condition that can range from mild to severe depending on how cold the body becomes.

Some groups of people are at more risk from hypothermia, particularly when the weather is cold. These include:

- Old people – especially if they do not have enough food or clothing
- Infants who sleep in cold places
- People who sleep outdoors during cold periods
- Those who have drunk alcohol and are exposed to the cold
- Those suffering from certain medical conditions such as diabetes

What do you see:

- **Mild**
  - The affected person shows signs of shivering, may complain of being cold and have difficulty using their fingers to do things like fasten buttons and zips
- **Severe (conscious)**
  - As the body cools further, the person becomes confused and starts to mumble and cannot talk very clearly
  - If they are able to move, they may stumble or be uncoordinated
- **Severe (unconscious)**
  - In cases of very severe hypothermia, the person loses consciousness and vital signs such as pulse and breathing slow down and become hard to detect

What should you do:

- If you suspect someone is starting to become hypothermic:
  - Ensure they have enough clothes or blankets to keep warm
  - Give them food and a warm, sweet drink
  - Move them to a warm place
  - Stay with them until they feel warm again
- If someone is severely hypothermic but still conscious:
  - Follow the same procedure as above
  - Call the emergency medical service and ensure the person receives medical care

- If you find someone who is in a cold place and unconscious:
  - Do NOT assume that the person is dead, even if you cannot find a pulse or detect any breathing
  - Gently place them into the recovery position
    - If they are lying on a cold surface, try to roll them onto something that will keep them warm (e.g. a piece of carpet, a blanket, layers of cardboard)
  - Do NOT try to warm the affected person, but prevent further heat loss by putting warm clothes or blankets on them
  - Seek urgent medical assistance and transport to medical care

Immersion hypothermia

If a person falls into cold water, the outer part of the body will lose heat very quickly. If they can be quickly rescued, rapid re-heating can prevent the onset of serious hypothermia that involves the vital organs becoming cold.

What should you do:

- Once the person has been safely and rapidly removed from the water:
  - Remove their wet clothing quickly and give them dry clothes to put on
  - Move them to a warm place
  - Give them food and a warm, sweet drink
  - Stay with them until they recover fully

Note: See page 55 - Drowning

Pregnancy and Childbirth

Note: For more information on childbirth, refer to the AFAM basic First Aid manual.

Pregnancy normally lasts for about 40 weeks, resulting in childbirth. Complications can sometimes occur during pregnancy.

Danger signs during pregnancy

If any of the following signs occur, the woman should be taken immediately to the hospital or health centre:

- Vaginal bleeding
- Seizures
- Severe headaches with blurred vision
- Fever and too weak to get out of bed
- Severe abdominal pain
- Fast or difficult breathing

If she has any of these signs she should go to the health centre as soon as possible:

- Fever
- Abdominal pain
- Feeling ill
- Swelling of fingers, face and legs

Bleeding during pregnancy

Bleeding at any stage of pregnancy, during childbirth and after giving birth, can be a sign of a serious problem. If there is bleeding at any stage, it is important not to delay seeking medical assistance.

Note: Bleeding is a leading cause of death related to pregnancy and childbirth.

Pregnancy Loss

Miscarriage generally occurs in the first 3 months of pregnancy, when the mother may lose the developing foetus. This may be accompanied by heavy bleeding and lower abdominal pain.

- Treat for shock (see page 80)
- Provide reassurance
- Monitor their vital signs
- Seek medical assistance and arrange for transport to medical care

Note: Remember, a woman who is expecting a baby may also suffer from other illnesses and ailments that are unrelated to being pregnant.

10 Safe Movement and Transport of the Ill or Injured

Turning, moving and transporting an ill or injured person is done for many reasons including:

- Safety
- To provide care
- To make them more comfortable
- To take them to hospital

Before moving an ill or injured person, you should be clear as to why you are doing it.

- Sometimes, it is necessary to move a person quickly to give them life-saving treatment
  - E.g. when they have vomited and are choking or suffocating
- In other situations, try to stabilise any injuries before moving the person
  - E.g. splint arms and legs as necessary and bandage wounds

While moving or transporting a person, it is important to keep monitoring their vital signs and, if necessary, to stop and provide care immediately.

Note: For more information on moving an ill or injured person when you are alone, see the AFAM basic First Aid manual.

10.1 Safety

Do not injure yourself while trying to move a person. Always use safe lifting techniques:

- Do not try to lift or move anything that is too heavy for you
- Get additional help if needed
- Be careful not to injure your back when lifting:
  - Keep your back straight
  - Bend your knees
  - Hold the person or stretcher you are lifting close to your body
  - Avoid twisting while carrying something heavy

10.2 Comfort

An ill or injured who is lying down should be placed on a padded surface whenever possible. Lying on hard ground can be very uncomfortable and even a stretcher without any padding will soon become painful. This is also important when transporting a person in a vehicle.

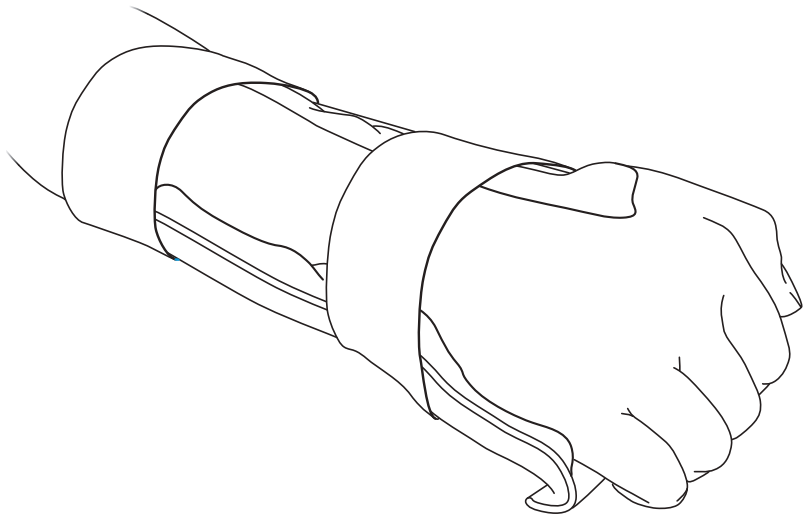
What should you do:

- Use blankets or clothing to provide something for the person to lie on
- Use any soft material (e.g. clothes) to pad around injuries
- Carefully fill any spaces between the person and the surface they are lying on

If you have to move or roll a person to provide First Aid care, this may also be an opportunity to make them more comfortable.

When applying splints, padding should be used to make the splint fit as closely as possible to the shape of the limb.

Use padding for comfort



10.3 Turning an Ill or Injured Person

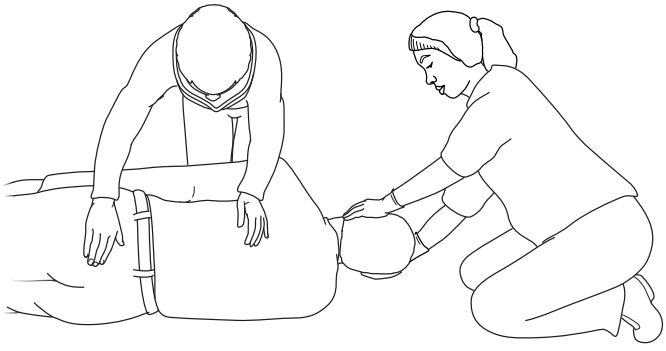
There are times when you will need to roll an ill or injured person in order to provide them with the treatment that they need.

What should you do:

If the person may have suffered a neck or spine injury:

- Check airway, breathing and circulation, and manage other injuries
- If possible, hold the person's head still to stabilise the spine
  - Avoid any unnecessary movement
  - There may be another First Aider or First Responder who can help do this
- If the person is to be rolled, keep the head in line with the body
  - Turn both head and body together

Stabilising the head



If the person is lying on their back:

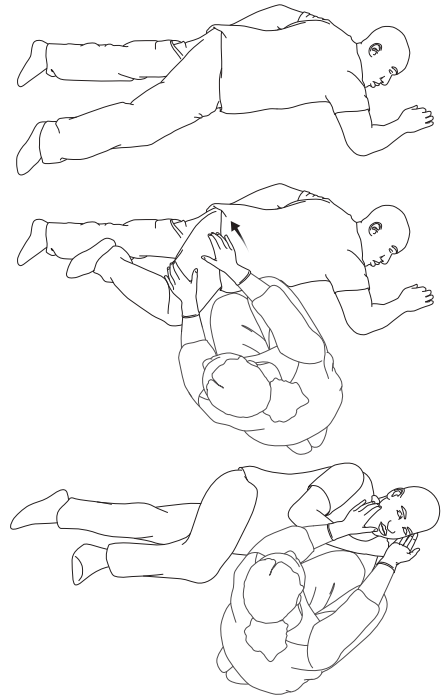
- An **unconscious** person should be put in the recovery position
- A **conscious** person may remain on their back if they are comfortable

If an unconscious person is lying face down:

Lying face down means that a person's weight is on their abdomen and chest. An illness or injury may make it difficult for someone to breath and they will benefit from being moved into the recovery position:

- Sit beside the person and put one hand on their hip
- Roll the person slightly onto their side
  - Push on the hip to roll them
  - At the same time, use your other hand to pull their leg up into a supporting position
- Adjust the head and shoulders to ensure proper drainage and an open airway

Moving a person who is lying face down

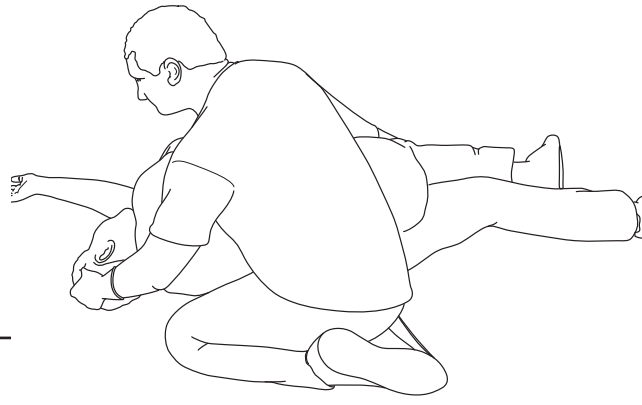


Moving a person who is on their side/in the recovery position

Sometimes it is necessary to roll a person onto their back. For example, this might be because they have stopped breathing and it is necessary to perform CPR, or because they need to be rolled onto their other side to prevent discomfort.

- Carefully roll the person onto their back
- At the same time, support the person's head, turning it with the body
  - Keep their nose in line with the centre of the chest

Rolling a casualty onto their back



10.4 When to Move an Ill or Injured Person?

People are found in many positions, particularly after an accident. It can be difficult, for example, to know what to do with an ill or injured person who is lying face down in the road, partially buried by a collapsed building or sat inside a vehicle after a collision.

To answer the question 'Do I need to move the ill or injured person?', use the priorities of First Aid to guide you:

- Is it safe?
- Do they have a life-threatening bleed?
- Are they conscious?
- Can they breathe (airway)?
- Are they breathing?
- Are there any serious bleeds (circulation)?
- Are there any serous disabilities?

If you cannot answer each of these questions or cannot treat a serious injury with the person in their current position, then you need to move them.

Examples:

- Safety
  - If there is flooding, is there a danger that you will drown?
    - If so, move the person to a safer place?
- Response
  - If the person is underneath a vehicle:
    - Can they talk to you?
    - Can they move a hand/foot if you ask them too?
  - If they do not respond, you need to carefully move them or the vehicle

10.5 Stretchers

Putting a person on any kind of stretcher (i.e. made for purpose or improvised) involves:

- Preparing them to be moved
- Securing them safely to the stretcher
- Transporting them to a medical facility

What should you do:

- Listen – the ill or injured person is the best person to tell you if you are hurting them
  - Lying on a stretcher is not a comfortable experience
- Secure the person to the stretcher using straps across the legs, pelvis and chest
  - Do NOT fasten their head to the stretcher
  - Avoid strapping over injuries
- Use padding under the straps so they do not hurt the ill or injured person

Putting Someone on a Stretcher

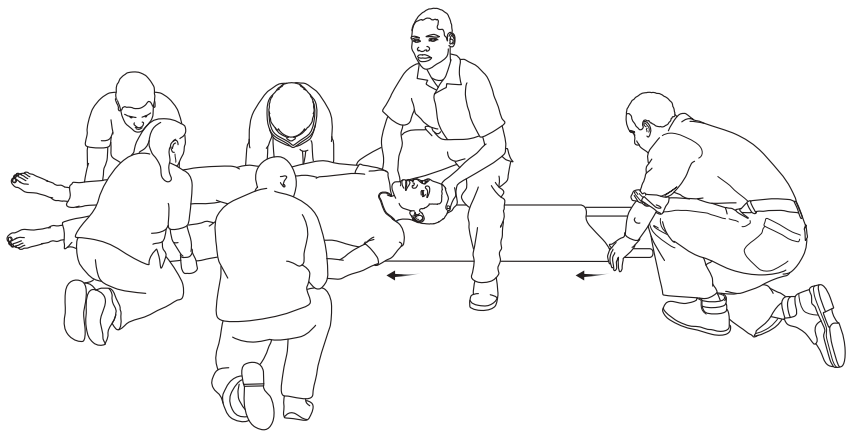
It is always preferable (and easier) to bring the stretcher to the person rather than move the person more than is necessary.

What should you do:

If there are enough people to assist, use the 'lift-and-slide' technique to place a person on a stretcher – refer to your basic training.

- Lift the person while a helper slides the stretcher underneath

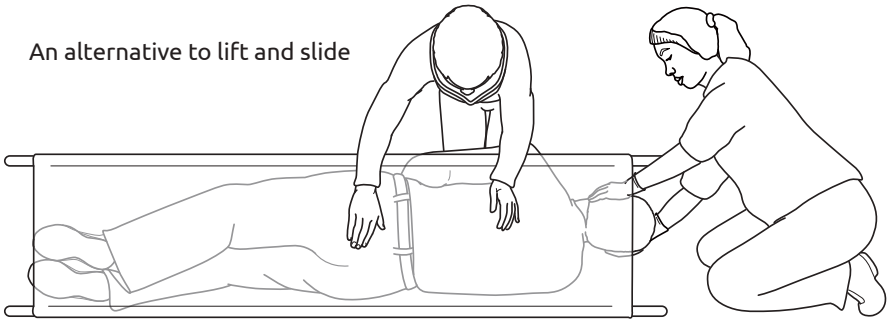
Lift and slide



An alternative method is as follows:

- Role the person gently on to their side
- Place the stretcher against the person's back and legs
- Gently, roll the person and stretcher back to the ground
- Pad spaces between the person's body and the stretcher
- Place rolled blankets on either side of the person's head to help keep it still
- Place the stretcher securely in a vehicle
    - Keep the person on their back
- Monitor breathing and be ready to put the person into the recovery position.

An alternative to lift and slide



Head

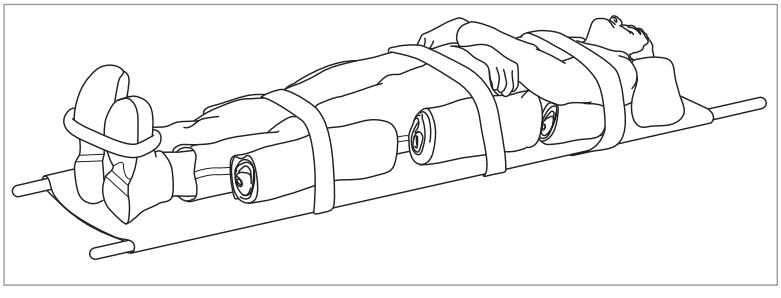
- Do NOT tie or fasten the person's head or neck to the stretcher unless you are trained to do so
- Immobilise the head by placing rolled blankets or similar on either side of the head

If spinal injury is suspected

If the person is conscious:

- Use padding to fill the natural gaps between the person's body and the stretcher
- Use rolled-up blankets or something similar to immobilise the person's head

'Package' the person securely

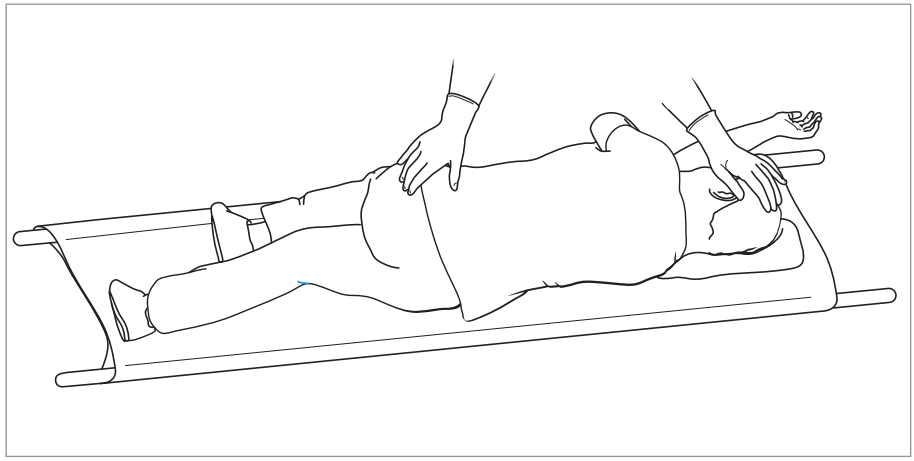


If the person is unconscious:

- Place the person on the stretcher while in the recovery position
- Use blankets, clothes, etc, to support them in the recovery position
- Ensure that their airway stays open and that they are breathing adequately

Note: There are many different types of stretcher available. You should be familiar and practise with the stretchers that are likely to be used in your region. Similarly, improvised stretchers are best learned about through practical training.

Moving an unconscious person



Caring for a Person on a Stretcher

A person on a stretcher is likely to be uncomfortable and feel vulnerable. You should talk to the person, reassure them, ask if they are in any pain or need anything and check to see that nothing is too tight or loose.

Do not overlook the person's basic needs, such as:

- Food and water (unless their injuries suggest they should not consume anything)
- Urination and defecation
- Heat and cold
  - Does the person need more or less blankets?
- Sunlight
  - Does the person need their eyes or skin protecting from the sun?

Safety, airway, breathing and circulation

Even with all of the challenges involved in moving or transporting a person, safety, airway, breathing and circulation remain a priority.

10.6 Transporting an Ill or Injured Person

There are several ways to transport a person to where they can be treated by a doctor or cared for at a hospital or clinic.

- By the ill or injured person themselves
- With the aid of the person's friend or relative
- With the assistance of a First Responder
- With a dedicated ambulance service

Transporting an ill or injured person involves a significant commitment and in the case of the seriously injured, a considerable risk. In these situations an ambulance is the best method of transport.

Before transporting an ill or injured person yourself, you should consider the following:

- Where are you going?
- How far away is it?
- How long will it take?
- Can help get to you faster?
- What if the vehicle breaks down?
- How will you monitor the person's condition while travelling?
- What happens if the person needs care during the journey?
- Are there any legal requirements such as insurance cover for the vehicle?
    - Could the person die while in your vehicle?
- What will happen if they do die?
- Who, if anyone, will pay for any treatment they receive?

If you have to transport someone, make sure your plan is adequate and do not delay your journey.

You should spend as much time as possible preparing the person in order to avoid unnecessary suffering. This applies as much to a short move to a more comfortable location as it does to transport for many kilometres to a hospital.

- Splints must be secured properly and have sufficient padding (see page 94)
- Impaled objects must be immobilised (see page 72)
- Arms and legs must be secured
- Seatbelts should be worn if the person is sitting

Where to place someone in the vehicle?

Note: If it is likely the person has a spinal injury, they must be transported in a lying down position.

Seated

If the person is conscious and able to sit, this is the best position for them.

Lying down/recovery position

- In some vehicles, it is possible to lower the back of the seats to make a flat platform for the person to lie on
- If the injured person is unconscious, you will need to keep them in the recovery position and monitor their breathing carefully
  - If the vehicle allows, lie the person out fully, otherwise, try and place them across the back seat

Arrival at a Medical Facility or Hospital

When you arrive at the hospital, you will need to transfer the ill or injured person to a healthcare worker and provide information about their condition (see page 46).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ACTION TEAM

11 Incident Management & Support

11.1 Working with the Emergency Services

As a First Responder you may be required to work with your local emergency services. These organisations have methods of working to ensure they operate in a safe and effective manner. You should know how to work with them.

Operational procedures

You need to understand the procedures that are used by your local emergency services.

- How will you be mobilised or activated?
- What are the safety rules and procedures?
- What are the typical markings/colours used to identify emergency vehicles?
- How is an incident area assessed?
- Who will be in charge?
- How will you communicate with them?

Training

There may be opportunities to receive additional training from local emergency services for activities such as safety and scene assessment, more advanced First Aid and other topics of interest.

Exercises

Local emergency services will often run practical exercises where they respond to a simulated incident. These events are a very good way to learn new skills and to practise working alongside other people. If possible, you should try and take part in these exercises and perhaps organise your own exercises with your team.

11.2 Deciding Who Needs Help First (Triage)

Triage is a way of deciding who needs help most urgently when you are unable to look after everyone at the same time. Triage is useful because:

- It means that people with the most life-threatening problems are cared for first
- It helps to ensure that as many lives as possible are saved, with the resources available
- It makes the best use of resources such as emergency services and hospitals

An example of when triage might be necessary could be when a building has collapsed or after a major storm has destroyed peoples' homes and there are many injured people needing help.

As a First Responder, you are most likely to do a 'primary triage' as part of a team and while supporting the emergency medical services.

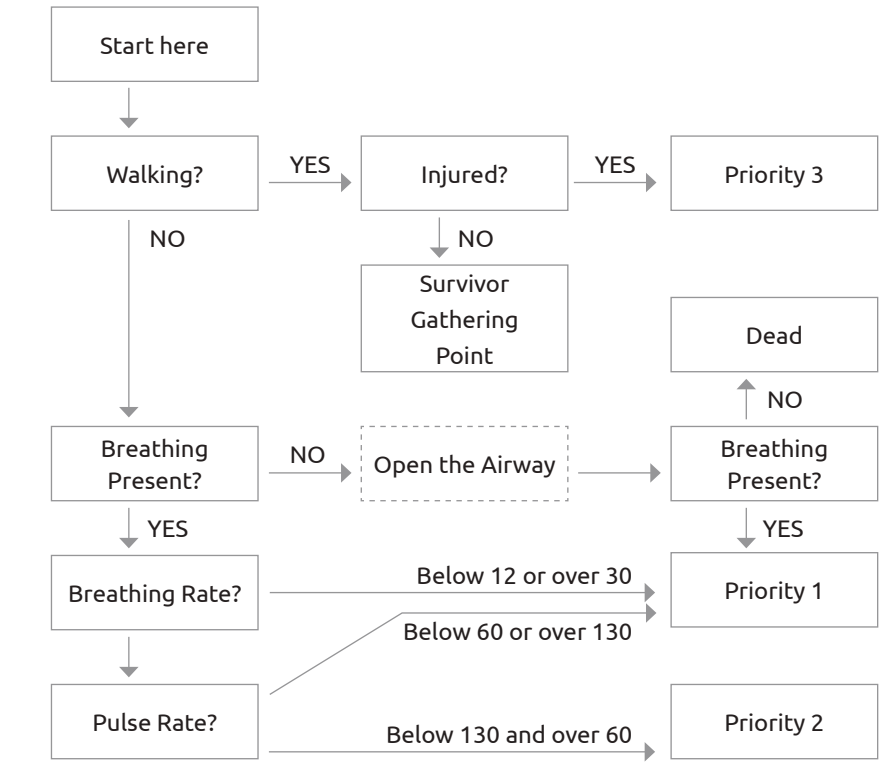
Triage is a rapid assessment to decide:

- Who is very seriously injured?
- Who has serious, but not immediately life-threatening, injuries?
- Who is uninjured or has minor injuries?
- Who shows no sign of life?

What should you do:

Follow the chart below and use mobility (can the person walk?), breathing and pulse to assess the affected people and give them a priority for treatment. This will give you 4 groups of people:

- Priority 1 – RED (urgent – immediately life-threatening injuries)
- Priority 2 – YELLOW (urgent – serious injuries)
- Priority 3 – GREEN (non-urgent Injuries)
- Dead – BLACK (no vital signs)
- If available, attach an appropriate priority label to each person's wrist
- A summary of the pre-hospital triage procedure:



Source: ICRC Pre-hospital Triage Algorithm

11.3 Using Two-Way Radios

You may be asked to use a radio in your role as a First Responder. This might be to report on an incident, call for help or to coordinate your work with the emergency medical services. Radios are also used during disasters so that responders do not have to rely on the phone system.

The most common type of radio is a handheld 'walky-talky' or two-way radio. Each region and emergency service will have its own procedures for radio communication so you must receive training before using them.

A short guide to using a two-way radio

- All messages should be:
  - Simple
  - Brief
  - To the point

- How to use a radio?
  - Hold the radio with the microphone 4-5cm from your mouth
  - Shelter the microphone from any wind
  - Push the 'press to talk' (PTT) button, pause slightly, then give your message
  - Speak clearly, at a normal talking speed
  - Use short sentences
  - Do not hold the radio by the aerial, as this can damage it
- Call-signs
  - A call-sign is used to identify an individual or team over the radio. For example, a call-sign might be *"CS47"* or *"Charlie Sierra 4-7"*
  - Proper names should not be used to identify people on the radio; this includes the names of ill or injured people

Radio communication

Terminology and phrases

Some words and phrases are used in radio communications to mean specific things. Some of the more commonly used terms are:

Term	Meaning
Over	I have finished speaking and now it is your turn
Out	I have finished talking and have no more to say
Roger	*"yes"* or *"confirmed"*
Go ahead	I am ready for you
Say again	Repeat your message
Standby	Wait a moment

If you need to spell a word out on the radio, use keywords to represent each letter (e.g. for 'G' you could say the word 'Golf'). See appendix V for a full list of keywords and how to say numbers.

11.4 Managing Personal and Medical Information

You will sometimes need to tell a health care worker about an ill or injured person that you have been helping. This may occur at the scene of the incident or at a medical facility such as a health centre or a hospital. Therefore, it is important to keep written records about an ill or injured person.

Any information about a person you have must be kept secure and confidential.

- You must only share this information with a health care professional or other authorised person
- You must NOT talk about the person to your own family or friends, the media or anyone else
- The role of the First Responder is a trusted position and you must not break that trust

Telling a Health Care Worker about an Ill or Injured Person

What should you do:

When you share information with a health care worker, it is helpful to do so in a step-by-step way. This will ensure that you do not forget anything important and that you share everything that is needed.

Start by saying who you are and the name of the ill or injured person, then follow the **A.T.M.I.S.T.** system below, to share information about the person's condition:

For an injured person

A	Age of the person
T	Time of the incident (when did it happen?)
M	Mechanism of injury (what happened?)
I	Injuries
S	Signs and symptoms (including vital signs)
T	Treatment given (what have you done?)

For an ill person

A	Age of the person
T	Time the illness started or was reported
M	Medical complaint (if you don't know what is wrong, say so)
I	Information about the complaint
S	Signs and symptoms (including vital signs)
T	Treatment given (what have you done?)

An example 'ATMIST report':

"Hello, my name is ...

This is John who is 37 years old. At 09.30 this morning he fell from a tree. He has a possible fracture to his left leg. There is swelling to his calf and shin area and an obvious deformity to the leg. He is unable to move his foot and describes the pain in his leg as severe. I have put a splint on his leg to immobilise it. He has no other injuries and is not allergic to any medicines.

Here is a copy of the patient report form."

Keeping and Sharing Written Records

It is important to record the First Aid care you have given to the ill or injured person by writing it down. Your organisation should provide you with a form to use and show you how to complete it, as it is an official record of your actions. Use appropriate language, avoid slang and unknown terms, and do not use derogatory/rude words. In some cases the report form may be used as evidence in legal proceedings.

These records contain confidential/private information and so they must be kept safe. Follow your organisation's procedures and never store them at home.

What should you do:

The type of information you need to record, would include:

- Name
- Age
- Date of birth
- Address
- The nature of the illness or injury
  - Including the main problem
- The cause of the injury or illness
- What you found when you examined them?
  - E.g. wounds, deformity, tenderness, swelling
- What are the vital signs?
  - Temperature, breathing, level of consciousness, pulse, etc.
- What has the person told you about the problem?
  - How are they feeling?
  - When did the pain start?
  - Have they had the problem before?
  - Has the person taken any medicines?

- What you have done to provide care?
- Your name
  - ... and any number or other identifying information

11.5 Dealing with the Deceased

As a First Responder you may come into contact with people who have died from a variety of causes. It is important that you are aware of some of the responsibilities that you may have.

When has a Person Died?

It is not normally your responsibility to decide if someone has died. This should only be done by a doctor. However, there are some situations when it may be reasonable to assume the person is dead. These situations include:

- Injuries incompatible with life (an injury that nobody can be expected to survive)
- Rigor Mortis (the body is rigid and cold)
- Decomposition (the body is already breaking down)

Comforting the Bereaved

Comforting someone whose loved one has died can be a difficult and emotional process. There are a number of steps you can take to assist you.

- Empathise by showing you understand they are upset
  - 'I can see you are really upset'
  - 'I'm so sorry this has happened'
- Avoid saying *"I know how you feel"* or similar
  - Only they know how they feel at this time
- Give time and respect silences
- Use touch if appropriate
- Ask what they would like to do next
  - E.g. do they want to tell anyone else?
  - E.g. are there family members to be notified?
  - E.g. do they want someone to come and stay with them?

Legal requirements

Your country will have legal requirements about who should be informed when someone has died. This may be the family doctor, the police or local authorities. It is important that these procedures are followed correctly.

Local customs and beliefs

Communities may have local customs, rituals and beliefs that surround death. It is important that you recognise these and that they may be different from your own beliefs. As part of death, surviving family members may need time and space to grieve.

Moving and transporting the deceased

It is not normally the role of the First Responder to move or transport the body of someone who has died. If you are asked to assist, perhaps after a disaster in which there are large numbers of dead, seek advice from a qualified person (e.g. a doctor) and ensure that you comply with the relevant legal and cultural expectations in your area. If you are in a post-disaster situation, be sure to comply with the local disaster management plan when it comes to controlling hygiene, etc (see chapter 12).

12 Disasters and the First Responder

As a First Responder you may be required to help your community prepare for and respond to disasters such as cyclones, floods or earthquakes.

12.1 Preparing for Disasters

Examples of how you might help your community to prepare for a disaster include:

- Conduct a disaster risk assessment for your area
  - To understand the potential hazards and how people could be harmed
- Increase awareness in your community of the hazards and risks they face
  - So they can prepare and plan what to do when disaster strikes
- Encourage and help your community to:
  - Prevent or reduce the impact of specific hazards
  - Develop a disaster response plan
    - So people know what to do in an emergency
  - Identify members of the community who are most at risk
    - And find ways of helping them

Hazards that can cause disasters

Disasters often affect many people and are usually caused by natural or man-made hazards.

Natural Hazards

- Flooding
- Storms
- Landslides
- Fires

Man-Made Hazards

- Transport-related
- Building collapse
- Terrorism
- Chemical release
- Epidemics
- Earthquake
- Tsunami
- Explosion

Make sure that you are aware of the types of hazards that could occur in your region. It is not always easy to predict when a disaster will happen, but you can undertake a 'hazard assessment' to try and decide what is most likely.

A **hazard** is any event with the potential to cause harm. Examples of harm include:

- Loss of life
- Injury
- Illness
- Psychological distress
- Damage to property
- Economic disruption
  - E.g. markets close
  - E.g. shops are destroyed
- Environmental damage
  - E.g. land is made unfit for agriculture

Vulnerability

Not all individuals or groups are able to prepare for, cope with and recover from the impact of a disaster with the same ability. For example, some people are more vulnerable to the effects of a disaster because:

- They cannot afford to store extra food for an emergency
- They may live on land that is more exposed to hazards
  - E.g. living on an unstable hillside
- They cannot afford health care if they are ill or injured

Other factors that may make people more vulnerable to disasters include:

- Age
  - E.g. the elderly may be more vulnerable to injuries
- Gender
  - E.g. women may be more exposed to sexual violence after a disaster
- Health
  - E.g. access to medication may be difficult after a disaster
- Ethnic Group
- Level of education

Disaster risk assessment

To identify the risk that members of a community are exposed to it is necessary to look at three things:

- The hazard
- The vulnerability of the people
- The likelihood of a disaster

For example:

- If there is a river in your region, does it cause flooding? - The hazard
- If so, how often does this happen? – The likelihood
- Who is likely to be affect by the flooding?
  - Is any group of people more likely to be affected than another? – The vulnerability

The combination of these three factors determines the level of risk that is present. When the risks for different groups in the community are understood, you can work to protect people from harm, help them survive a disaster and help them to recover afterwards.

This process, known as **'Disaster Risk Management'**, has several parts.

- **Before**
  - Prevention of harm
    - E.g. moving people away from areas of danger
    - E.g. moving a hazard (e.g. a toxic chemical), away from people
  - Reduction of harm
    - E.g. ensuring buildings are built as strong as possible so that injuries are reduced during an earthquake
  - Ensuring that the elderly or sick will be looked after during a disaster
- **During**
  - Responding
    - E.g. providing First Aid to the injured
    - E.g. organising a casualty collection point
    - E.g. helping transport people to medical care
- **After**
  - Recovery
  - Helping the community to rebuild so that it is less vulnerable in the future
    - E.g. Building new homes away from an area of flooding

12.2 Responding to a Disaster

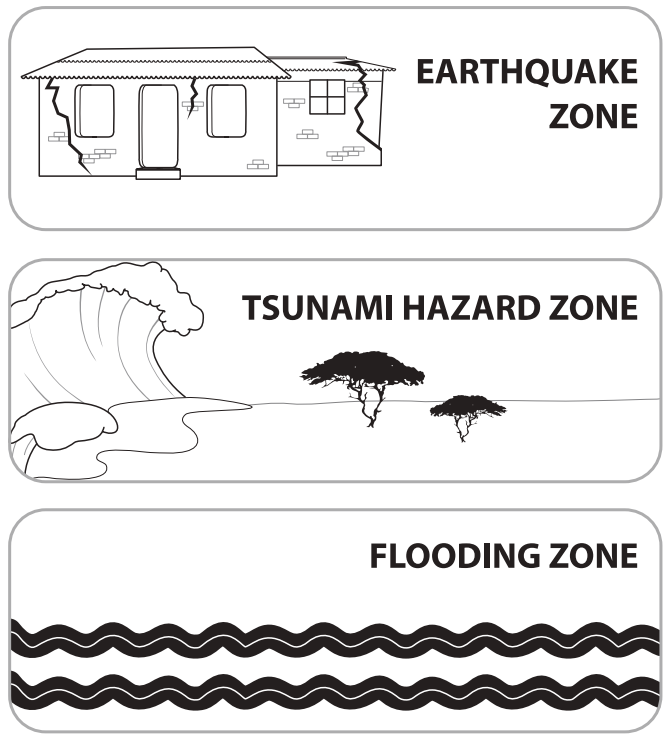
It is important to practise how you will **respond** to a disaster before it actually happens. This will help you to respond more quickly and more effectively as well as to coordinate with other emergency and community groups.

Safety first

To be able to help people in the event of a disaster, you first need to protect yourself and any resources or equipment that you need for your First Responder role, for example, if a cyclone affects your region.

- How will you stay safe during the cyclone?
- Where will you keep your First Aid kit?
  - So it remains safe and accessible
- Do you have suitable clothes and PPE to wear after a cyclone?
  - E.g. boots and strong gloves for moving debris
- How will you contact your supervisor, a doctor or hospital if the storm causes the phone system to stop working?
- If you will be working in a team, where will you meet?
- How will you know what has happened if a team member is missing?
- How will you ensure that your own family is safe while you help other people?
- Is there an early warning system for your community?
  - Sirens to warn of flooding
  - SMS/Text messages
  - Radio announcements
- How will you evacuate if it becomes necessary or you are told to leave by the authorities?

Warning signs



Immediately after a disaster, you may be asked to assist in the rescue and care of those affected. In this case, you should:

- Make sure you are safe
- Check on family and friends to make sure they are OK
- Implement your disaster response plan
  - E.g. provide First Aid as you would for any incident
  - E.g. assist local emergency services

Possible duties of the First Responder during disaster response

Needs assessments

After a disaster, it is important to find out how the population has been affected. By speaking to communities and community leaders you can find out how many people are affected and their immediate needs, such as food, water, shelter and medicines.

If you are asked to undertake a needs assessment, make sure you know exactly what information must be collected and who you should collect it from. Everything you find out should be written down and returned to the organisation that deployed you – your local Red Cross/Red Crescent society will have a form on which to record this information.

Psychosocial support

Following a disaster many people will be in distress and providing psychosocial support is a valuable activity. Simply listening to someone's story about their experience during the disaster can help them begin to recover.

Distributing Supplies

You may be requested to assist with the distribution of essential supplies by relief agencies, such as food, water, hygiene kits and shelter packages. You should follow the instructions that you are given as the contents of these packages may be designed for specific groups of people, such as families with small children.

Working with International Agencies

Some emergencies are so large that an international response is required and people from other countries may arrive to help with the response. The first teams to arrive often include search and rescue specialists, emergency medical teams and other disaster management specialists.

Later on in the response and as part of the recovery process, other agencies may arrive to deliver supplies such as food, water, shelter, medicines and reconstruction materials.

You may be asked to work alongside these teams as part of the response and recovery process. Always remember that you have important knowledge about your community and the area affected by a disaster that people from outside your region do not have. They will value your assistance in understanding what has happened and how they can best help.

12.3 Risk Management

'Risk Management' means controlling the likelihood and severity of the danger that might come with a disaster. It is important to share advice on risk management with your community so that everyone can prepare and protect themselves.

Here are some general tips on how to prepare for a variety of hazards, act during a disaster and care for your family and community afterwards. Not all of the hazards will exist in your region and so it is important to think about the real dangers that apply to where you live.

Preparation

- Understand the types of hazards that might occur in your region
- Ensure family members know what to do during a disaster
  - In particular, the elderly and children
- If possible, ensure you have a supply of food and water for 3 days
- Know possible escape routes from high risk such as:
  - Where there is a risk of fire
  - From areas at risk of sudden flooding or tsunami
- Have a planned evacuation area and meeting point for family and friends in case you are separated at the time of a disaster

Natural and man-made hazards

Thinking about the type of danger that might exist can help with preparations to protect yourself from a disaster. These dangers may be natural or man-made.

Natural hazards

- Landslides
  - Consider the safety and location of buildings located at the bottom of steep slopes
  - Plant trees on steep slopes to help increase the stability and reduce landslides
- Flooding
  - Place household items high up off the ground
  - Ensure drains around your home are kept clear and unblocked
- Earthquakes
  - Make your home and workplace less vulnerable to earthquake
  - Secure items that might fall during an earthquake
  - Practise taking a protective position for use during an earthquake
- Fire
  - Know how to evacuate an area if there is an outbreak of fire nearby

Man-made hazards

- Vehicles
  - Wear seatbelts when provided in cars, buses, trucks
  - Wear a helmet whilst on a motorbike
- Buildings
  - Check that fire safety measures are in place:
    - E.g. fire doors
    - E.g. sprinkler systems
    - Check fire escape routes are clear and signposted
- Industrial Dangers
  - Know the risks if you live or work near an industrial facility where potentially dangerous chemicals or materials are used

During a Disaster

- Staying safe
  - Remain alert and aware of the situation
  - Move to a safe place if you can do this without danger
  - Check the safety of friends and family
    - Provide First Aid if required
  - If indoors
    - Keep clear of windows in case they break
    - Avoid falling objects
  - If outdoors
    - Move away from buildings, tall structures and power lines
    - Protect yourself from falling debris
- Evacuation
  - Listen to the local radio for information from the authorities
  - If told to evacuate, follow the instructions of local authorities – do NOT delay
- Flooding
  - Be aware of fast-moving flood water
  - Do NOT enter flood water unless trained to do so
  - Flood waters can be contaminated with bacteria, raw sewage and debris
- Storms and high winds
  - Be aware of flying debris and loose items in storms and strong wind
- Fires and volcanic eruptions
  - Only attempt to fight fires if trained to do so
  - Cover your mouth and nose with a damp cloth to avoid breathing in hot air and ash

After a Disaster

- Ensure that you remain safe
  - Do NOT take unnecessary risks - you cannot help others if you are injured
- Provide First Aid and psychosocial support where necessary
- Check on family and friends to see that they are okay
- Do not re-enter any affected buildings unless told it is safe to do so
- Be aware of any unstable structures in the area
- Follow the advice provided by local emergency agencies

Prevention of infectious diseases

There is a high risk of disease after a disaster and it is useful to think in advance about how you can stay healthy after a disaster has occurred.

- Maintain clean water and food preparation areas
- Maintain personal hygiene by washing hands in clean water using soap or ash
- Have an awareness of any diseases outbreaks in the community
- Get vaccinated if appropriate

Other dangers

- After flooding
  - Mould can appear in affected buildings and on belongings; this will need to be cleaned thoroughly
  - There is an increased likelihood of vector-borne disease such as malaria due to pooled and stagnant water
- Fire and volcanic eruptions
  - Wear respiratory protection if involved in the clean-up of ash and dust
- Wild and domestic animals
  - Animals that are distressed by a disaster may become aggressive even if they are normally friendly or calm
- Buildings
  - Keep away from unstable buildings. Do not enter them until you are sure they are safe

12.4 Command and Control Systems

At the scene of an incident, coordination within and between the responding agencies is vital. To assist in this area, command and control systems have been developed for use by all agencies. As a First Responder you form part of this structure and it is important that you talk with local emergency services to understand how they will contact you when they need you to respond. This may be via a telephone call, an SMS message or a pager system.

Definitions

There are some terms you may hear in relation to emergencies and major incidents; a few have been listed below. You should be familiar with local practices to ensure that you understand the methods of working and any specific terminology in use.

- **Command**
  - This is done by those who have been given authority over others to make decisions and give direction to achieve jointly agreed objectives
- **Control**
  - This is the authority and capability of an organisation to direct the actions of its own personnel
- **Coordination**
  - This is the integration of the actions of multiple agencies in order to achieve defined objectives and can occur at any level of the command and control structure
- **Major incident**
  - This is an incident with a range of serious consequences which requires special arrangements to be implemented by one or more responding agencies

Command and Control Systems

To respond effectively to a disaster or major incident, the emergency services will have a system in place to provide structure and focus to their response. This is known as a 'command and control system'. You may be included in this system and it is important that you know where you fit in.

An example of a command and control system that is commonly used is the 'Gold, Silver and Bronze system'. Each colour represents a different level of responsibility:

Gold

- The strategic level of command and control
- Describes **what** the agency(s) intend to do
  - E.g. it describes the specialist teams that are needed
  - E.g. we will mobilise First Responders to help respond to a flood emergency

Silver

- Describes **how** the plans will be implemented to achieve the targets described at the gold level
- This is where the response to an emergency is coordinated
  - E.g. First Responders are deployed to the city after an earthquake and provide First Aid to the injured persons

Bronze

- This level includes the teams of people who actually put the plan into operation
- It involves the management of people at the scene of an incident
- This level includes First Responders, perhaps working together as a team

Major Incident Reporting

If you are the first person on the scene of a major incident, you will need to send information to the emergency services immediately after your arrival and once you have assessed the situation. This should be done before you start treating any injured people.

A good way to remember the information you need to send is to use the M/ETHANE memory device.

M Report that you have a **Major** Incident – only use this if the scale of the incident is severe

E **Exact** location – give the exact address of the incident

T **Type** of incident – describe the type of incident, (e.g. train crash, building collapse)

H **Hazards** – list any hazards present or suspected (e.g. flood water, leaking fuel, gas)

A **Access** – describe the best/safest access routes to the incident

N **Number** – an approximate number of injured people

E **Emergency Services** – say what other emergency services and assistance you require

Conclusion

Preparing for, responding to and recovering from a disaster involves a wide range of knowledge and resources. As a First Responder, you are in a good position to encourage and persuade your community to think ahead and put plans in place that will help reduce unnecessary suffering if a disaster were to occur.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13 Preventing Illness and Injury

As a First Responder, you are in a position to promote health and well-being in your community. This can be done formally through organised activities and informally by providing advice as and when the opportunity arises.

- **Prevention**
  - You can help prevent the spread of disease by encouraging others to follow simple hygiene procedures, such as handwashing before preparing food, after going to the toilet and after caring for the sick
  - Identifying and raising awareness of hazards in the community can help prevent injuries:
    - E.g. is there a risk of drowning where children swim in a local river?
    - E.g. are people being injured by broken glass on the street?
- **Early recognition of illnesses**
  - By understanding and recognising the signs and symptoms of illnesses, you can ensure that people receive care before their condition becomes more serious
- **Providing First Aid care**
  - Knowing how to provide First Aid care is one of the fundamental skills of a First Responder. By training and practising, you will be in a good position to help others when they are in need, whether ill or injured
  - You can also teach basic First Aid skills to people in your community, such as how to clean wounds and treat minor burns and advise people what to keep in their own First Aid kits
- **Referring the ill and injured to suitable care providers**
  - Ensuring that an ill or injured person receives the appropriate level of care is an important part of the First Responder's role
  - If a person requires medical care beyond First Aid, then it is important that you know where they should be taken or advised to go, so that they receive the appropriate care (e.g. a clinic or hospital, a local doctor)

Contacts

You should make a list of useful contacts in your region. This might include hospitals, health clinics, as well as organisations such as the Red Cross/Red Crescent. This will help you understand where the ill or injured can be referred to for medical assistance. The table below can be used:

Name	Address	Service	What is Available

Health Promotion

As part of your local Red Cross/Red Crescent society, you may also have the opportunity to take part in health promotion events such as 'No-smoking' days or other health awareness-raising activities.

Appendix I: Making a Home First Aid Kit

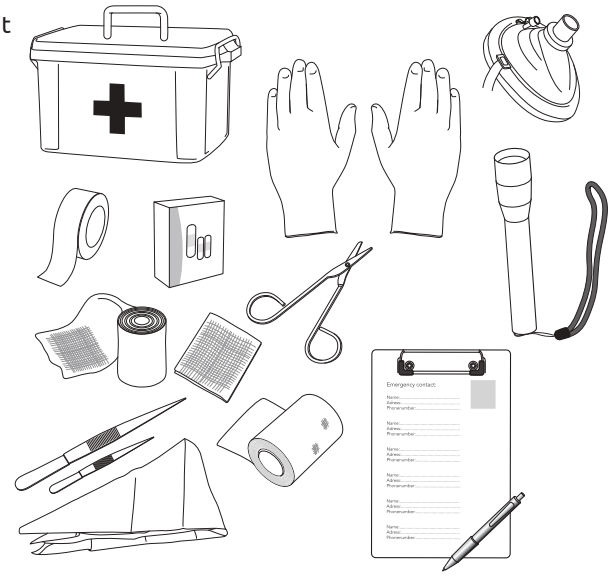
When deciding what to put in a general purpose First Aid kit (e.g. to keep at home), follow the advice of your local Red Cross/Red Crescent society. Try to include items that can be used for several different purposes. For example, wound dressings are more versatile than an eye-bandage.

Some useful items you can put into a home First Aid kit include:

- Gloves
- Adhesive plasters
- Sterile wound dressings
- Roller bandages
- Triangular bandages
- Scissors (scisscors with rounded ends are the safest)
- Tweezers
- Adhesive tape
- Small note pad
- Pen/pencil
- Face shield or pocket mask
- Torch

Keep the First Aid items in a secure container that will keep them clean and dry.

Equipment for a home First Aid kit



Appendix II: Equipment for the First Responder

The equipment available to a First Responder will vary from region to region. It is important to remember that equipment is no substitute for basic First Aid skills. Equipment will not help the ill or injured person if used incorrectly.

In addition to basic First Aid materials, First Responders might be approved to carry some of the following items to include in their available equipment:

- Personal protective equipment
  - High visibility vest
  - Protective eyewear
- Hand sanitiser
- Thermometer
- Pupil torch
- Pulse oximeter
- Blood glucose testing machine
- Medical waste disposal bags
- Pressure dressings
- Adhesive tape
- Splinting device
- Aspirin
- Paracetamol
- Glucose tablets
- Foil rescue sheet
- Roll of plastic food wrap

These items should be provided for you by your First Aid organisation; you do not normally have to buy them yourself.

Equipment needs to be checked regularly to confirm that everything is present and in good condition. Place the equipment in a suitable bag or sack that is both easy to carry and to clean.

Example of equipment for a First Responder

Appendix III: Equipment Instructions

This appendix contains information about selected procedures and equipment that are used for measuring, monitoring and caring for the ill and injured. This information is for reference only. Proper training is required to correctly apply this information as well as an understanding of the legal implications of doing so.

Topics covered:

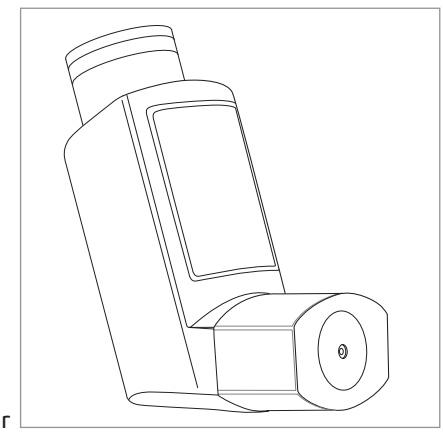
Asthma:	Inhalers and Spacers
Diabetes:	Blood Glucose Meters
Anaphylaxis:	Adrenaline Auto-Injector
Temperature:	Thermometers
Blood oxygen:	Pulse oximeter

How to Use an Asthma Inhaler

Asthma inhalers come in a variety of designs; two common types are described here.

How to Use a Pressurised Metered Dose Inhaler ('pMDI')

Getting inhaler technique right is very important because it helps manage symptoms better. It may take a few tries to feel comfortable using the inhaler, but it does get easier with practice.



Pressurised metered dose inhaler

Testing the inhaler

When you first get your inhaler or if you haven't used it for five days or more, you will need to test it.

- Take the cap off
- Shake the inhaler well
- Point the mouthpiece away from you and press the canister to release a puff into the air
- How many test sprays you need to do will depend upon your inhaler, so do check the instructions
- Some inhalers have a dose counter - check it is not empty

Using the pMDI Inhaler

1. Hold the inhaler upright and take the cap off
2. Check that there's nothing inside the inhaler mouthpiece
3. Shake the inhaler well
4. Sit or stand up straight and slightly tilt your chin up, as it helps the medicine reach your lungs

The next steps all happen smoothly in one action:

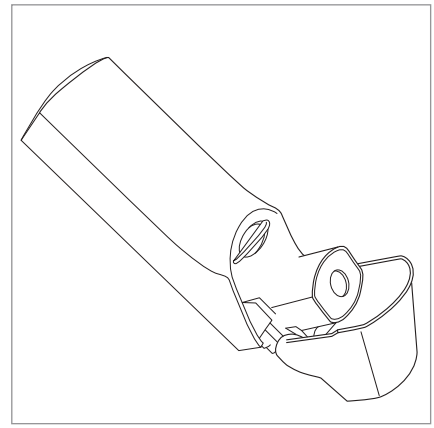
5. Breathe out gently and slowly away from the inhaler until your lungs feel empty and you feel ready to breathe in
6. Put your lips around the mouthpiece of the inhaler to make a tight seal
7. Start to breathe in slowly and steadily and at the same time, press the canister on the inhaler once
8. Continue to breathe in slowly until your lungs feel full
9. Take the inhaler out of your mouth and with your lips closed, hold your breath for up to 10 seconds or for as long as you comfortably can
10. Breathe out gently, away from your inhaler
11. If you've been prescribed a second puff, wait 30 seconds to a minute and shake the inhaler again. Then repeat the steps
12. When you have finished, replace the cap on the inhaler
13. If you've used an inhaler that contains steroids, rinse your mouth with water and spit it out to reduce the chance of side effects

How to Use a Dry Powder Inhaler (DPI)

Getting inhaler technique right is very important because it helps manage symptoms better. It may take a few tries to feel comfortable using the inhaler, but it does get easier with practice.

To use your DPI inhaler

DPI



1. Open the cap by pulling it down until you hear a click
2. Check there's nothing inside the mouthpiece
3. Check the dose counter to make sure the inhaler isn't empty
4. Hold the inhaler upright
5. Do not tip the inhaler upside down as the powder may fall out
6. Sit or stand up straight and slightly tilt your chin up as it helps the medicine reach your lungs

The next steps all happen smoothly in one action:

7. Breathe out gently and slowly away from the inhaler until your lungs feel empty and you feel ready to breathe in
8. Put your lips around the mouthpiece to make a tight seal, taking care not to block the air vent
9. Breathe in quickly and deeply until your lungs feel full
10. Take the inhaler out of your mouth and hold your breath for up to 10 seconds or for as long as you comfortably can
11. Breathe out gently, away from your inhaler
12. If you've been prescribed a second puff, close the cap to reset the device and repeat the steps
13. When you've finished, close the cap
14. If you've used an inhaler that contains steroids, rinse your mouth with water and spit it out to reduce the chance of side effects

How to Use a Spacer with an Inhaler

Spacers are used to assist people with asthma to take their medicine from a pMDI. They are simple to use and can help the person to get more medication into their lungs.

Note: this does not work with DPI's.

Using a commercial spacer

If someone is having an asthma attack and wants to use a spacer along with their inhaler they should be encouraged and assisted to follow this procedure:

- Take the cap off the inhaler
  - Check the mouthpiece is clear
- Shake the inhaler

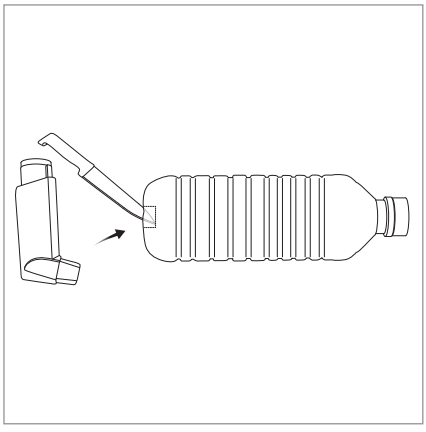
- Put the inhaler into the hole at one end of the spacer
- Remove the cap from the spacer if it has one
- Place the mouthpiece of the inhaler between the lips and make a seal
- Begin to breath in and out
- Operate the inhaler so that medicine goes into the spacer
- Continue breathing through the mouthpiece
  - Breath in and out 5 times

Note: Further doses may be required if symptoms do not improve

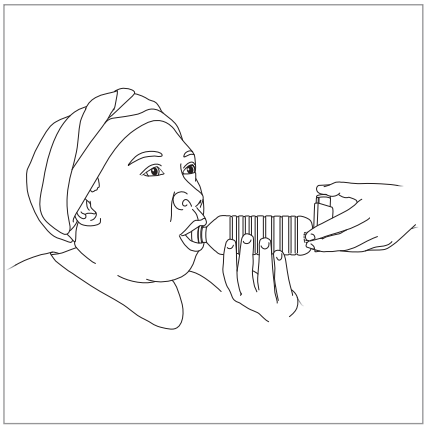
How to make an improvised spacer?

1. Take a medium-sized plastic water or soft-drink bottle (about 500ml is good)
   - **a.** Ensure that the bottle is clean and dry
   - **b.** ONLY use bottles that you know have been used just for drinking water or soft drinks
3. Cut a small slit, about 4cm long, in the side of the bottle, near to the bottom
4. Give the inhaler a shake
5. Place the mouthpiece of the inhaler into the slit that you made in the bottle
6. Tell the person to breathe out as much as they can
7. Ask the person to place their lips around the mouth of the bottle and form a seal
8. Press the canister on the inhaler once to spray medication into the bottle
9. When ready, the person breathes in normally and as deeply as possible and then holds their breath for as long as possible
10. If further doses of medication are required, repeat the above method

An improvised spacer



Using an improvised spacer



Blood Glucose Meters

The level of glucose (sugar) in the blood can be measured with a blood glucose meter. This involves taking a small drop of blood and placing it in a machine that will measure the glucose content. Understanding and measuring blood glucose levels is important for people with diabetes.

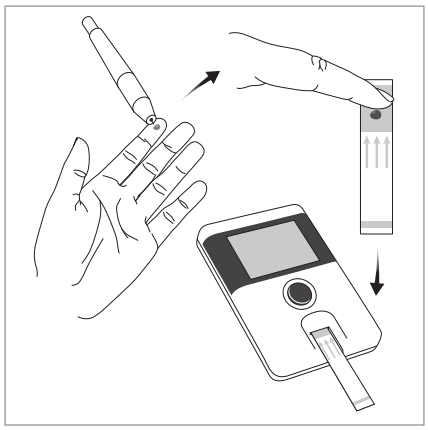
If you are trained to do so and the law in your country permits it, you may assist a person to measure their blood glucose level.

How to Use a Blood Glucose Meter

1. Wash your hands and the hands of the person being tested
2. Place a testing strip into the blood glucose meter
3. Use a spring loaded 'pricker' on the side of a fingertip to produce a drop of blood
4. Dispose of the used pricker in a suitable container
5. Touch the test strip against the drop of blood and keep it there until a reading is given
6. Read the blood glucose level from the meter

Note: The above is only general advice, meters vary in design and you must be trained by a medical professional to know how to use them correctly.

A blood glucose meter



Adrenaline Auto-Injector

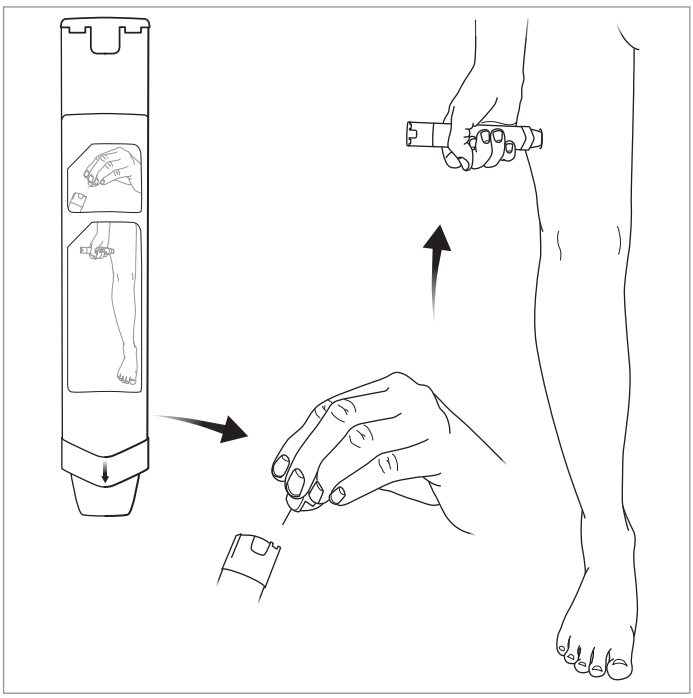
An Adrenaline Auto-Injector is a disposable, pre-filled automatic injection device that administers epinephrine in the event of a severe allergic reaction. There are several types of device available and so it is important to read the instructions that go with them and know how to use them properly.

Important things to know about the auto-injector include:

- If a person needs to have an auto-injector, it will be prescribed to them by a qualified doctor
- If a person who suffers from anaphylaxis begins to show signs of an allergic reaction, use the injector immediately. Do NOT wait for the attack to become severe
- The auto-injector includes a safety device to prevent it being used accidentally
- The auto-injector is used to inject adrenaline into the thigh muscle
- The injection can be administered through clothing
- After giving an injection, gently massage the thigh to encourage the adrenaline to circulate in the body
- After giving the injection, check that the device is carefully disposed of and that no one can be harmed by the needle

After using an auto-injector, the person may become distressed or their body may start to shake. This is normal and you should provide reassurance. It is very important to arrange for immediate medical care after using the device, as the person may have further anaphylactic reactions.

Using an adrenaline auto-injector

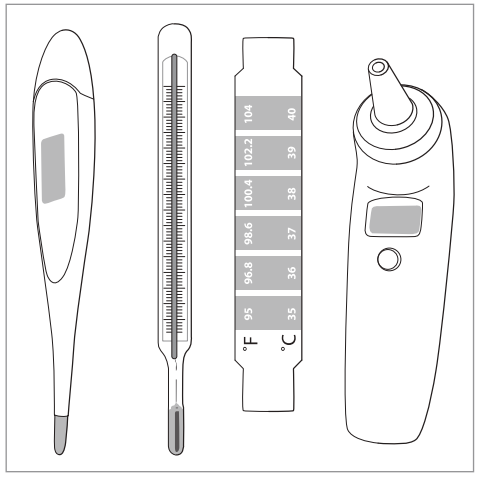


How to Use a Thermometer

A thermometer provides an accurate measurement of a person's body temperature. There are various types of thermometer available, the most common are:

- 'Bulb-type' oral thermometer
- Digital oral thermometer
- Forehead thermometer
- Ear sensor

Thermometers



Whatever type of thermometer you use, ensure that it is intended for measuring body temperature as other types, such as those used in cooking, will not give an accurate reading or may contain mercury that can be dangerous if the thermometer breaks.

Before using any thermometer, ensure that it has been properly cleaned.

- To use a digital oral thermometer
  - Place the tip under the tongue and leave for about 30 seconds before reading the temperature from the scale or display
- Oral thermometers should not be used on babies or small children.
- To use a glass-type oral thermometer
  - You will need to leave the thermometer in the mouth for up to 2 minutes to get an accurate reading
- Forehead thermometers
  - These are used on small children and held against the forehead for 30 seconds
  - The colour of the heat sensitive strip will change, showing the temperature
- Ear sensors
  - These are useful for taking the temperature very quickly and are simply placed gently in the opening of the ear and have a disposable ear piece
  - A reading is provided within a few seconds

Axillary temperature

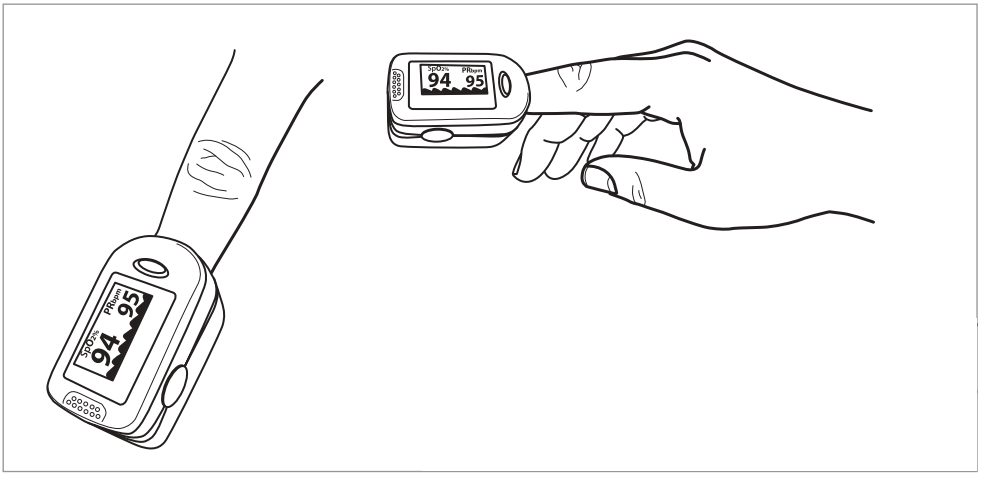
Body temperature can be measured at the armpit. An oral thermometer can be used for this purpose (if using a glass-type thermometer, be careful that it does not break).

Place the thermometer under the armpit for several minutes before reading the temperature.

Note: The temperature at the arm-pit will typically be 1° Celsius lower than in the mouth.

How to Use a Pulse Oximeter

The pulse oximeter



Attaching a pulse oximeter to a person

- The pulse oximeter should:
  - fit comfortably on the finger
  - not be too big or too small
  - not be too tight or too loose

After applying the meter, it may take a little while to start working.

Some things can stop the meter from working

- Nail varnish
- Bright light
- If the person moves too much
- If the finger is cold
- If there is poor circulation
- Carbon monoxide poisoning

If the meter is not working, try one or more of the following:

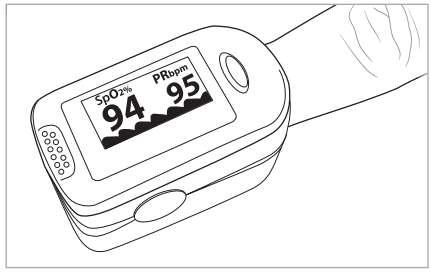
- Put it on another finger
- Place it sideways on the finger
- Put it on the person's toe
- Change the batteries
- Use your own finger to see if you get a reading

How to read the pulse oximeter?

Each meter is slightly different. There is usually a digital screen on the top of the meter that shows at least two readings:

- The heart rate
- 'SpO_2' – the percentage (%) of oxygen in the red blood cells

Reading a pulse oximeter



Note: Do not confuse the two numbers (e.g. a heart rate of 94 and SpO_2 of 95).

Appendix IV: Using an Automated External Defibrillator

An AED is a device that assesses the condition of an ill person's heart and is capable of delivering an electric shock if necessary. General instructions for use are given below, but the actual ones may vary slightly.

Switch on the AED
This may happen automatically when you open the device or you may have to press a large button

▼

Follow the voice prompts
The AED will tell you what to do. Follow the instructions carefully ... they will be similar to the following ...

▼

"Attach pads to the casualty"
Attach the pads to the casualty's chest in the position shown on the back of the pads

▼

"Plug in the connector"
(If necessary, plug in the leads that connect the pads to the AED – they may already be connected)

▼

"Stand clear of the casualty"
Ensure that no one is touching the casualty – it is okay to sit beside them

▼

"Analysing"
The AED is checking the casualty to see if they require an electric shock to be delivered ▶

At this point, the AED may follow one of two different pathways ...

Follow the voice prompts

The AED will tell you what to do. Follow the instructions carefully ... they will be similar to the following ...

... If a shock is required

"Deliver shock now. Press the [colour] button now"

Press the indicated button to deliver a shock to the casualty to try and reset their heart

"Continue CPR"

As soon as the shock button is pressed, it is safe to start CPR again

Follow any further instructions from the AED – there may be a pause before the next prompts. The AED may analyse the casualty several more times and advise that further shocks are needed

... If a shock is NOT required

"Continue CPR"

Follow any further instructions from the AED – there may be a pause before the next prompts.

The AED may analyse the casualty several more times and advise that shocks are needed

Do NOT stop CPR unless the AED or a doctor tells you that it is okay to do so.

Appendix V: Radio Communications

Spelling Words

If you need to spell a word, such as an unusual place name or the name of a medicine, use the 'phonetic alphabet' to ensure you are understood.

A – Alpha	G – Golf	M – Mike	S – Sierra	Y – Yankee
B – Bravo	H – Hotel	N – November	T – Tango	Z – Zulu
C – Charlie	I – India	O – Oscar	U – Uniform	
D – Delta	J – Juliet	P – Papa	V – Victor	
E – Echo	K – Kilo	Q – Quebec	W – Whisky	
F – Foxtrot	L – Lima	R – Romeo	X – X-ray	

If you cannot remember a keyword, use an alternative word. E.g. if you cannot remember 'uniform' for 'U', you might try 'umbrella'.

Numbers

When saying numbers, it is helpful to pronounce them as follows:

0 – Zee-ro	5 – Fife
1 – Wun	6 – Six
2 – Too	7 – Seven
3 – Thuh-ree	8 – Ate
4 – Fo-wer	9 – Niner

Example of Radio Communication

This message imagines a conversation between an emergency operations centre (Base) and a First Responder (Charlie Sierra 4-7)

Base: *"Charlie Sierra 4-7 from Base, are you receiving, over?"*

CS4-7: *"Base from Charlie Sierra 4-7, go ahead, over"*

Base: *"Charlie Sierra 4-7 from Base, please provide an update on your casualty, over"*

CS4-7: *"Base from Charlie Sierra 4-7, we are treating 1 male casualty with a fractured leg, over"*

Base: *"Charlie Sierra 4-7 from Base, message received, out"*

Appendix VI: Patient Report Form

Patient Record Sheet

Name:	Date:		
Sex (M/F):	Time:		
Address:			
Phone Number:	Location:		
Date of Birth (or approximate age):			
Mechanism of Injury (if applicable):	Major Injuries (if any):		
Vital signs	Time:	Time:	Time:
Level of Consciousness			
Breathing			
Temperature & Colour			
Pulse			
Pupil Reaction			
Other Information			

Name of First Responder(s):_____

Patient Record Sheet

Name:	Date:
History of the Illness (SAMPLE)	**Specific Symptoms (OPQRST)**
S – Symptoms: (How do they feel? What is the main problem? What else do they feel? E.g. hot, cold, headache, pain, nauseous, dizzy, afraid	**O – Onset:** When did the pain/discomfort start?
A – Allergies: (Are they allergic to anything? Have they recently been in contact with an allergen? E.g. bee stings, foods, medicines, etc.)	**P - Provokes or eases:** What makes the pain worse/better?
M – Medication: (Are they taking any medication? Prescribed by a doctor? Bought in a shop? Recreational drugs? Alcohol? Herbal remedies?)	**Q – Quality:** What does the pain feel like?
P - Previous medical history: (Has this happened before? Has the person had any other medical problems in the past?	**R – Region:** Where does it hurt?
L - Last intake/output: When and what did they last eat/drink? When did they last urinate/defecate? Was there anything unusual? Have they vomited or been sick? When was this?	**S – Severity:** How bad is the pain? How would you score the pain on a scale of 1 to 10, if **1** is no pain at all and **10** is the worst pain you can imagine?
E – Events: (How long have they had the problem? Is there anything that has happened that may be causing them to feel unwell?	**T – Time:** When did you start to feel the pain?

Name of First Responder(s):_____

Appendix VII: Glossary

Note: The definitions given below are not definitive and other publications may define terms differently. Those provided here are intended to give practical definitions for First Responders.

Adrenaline A hormone produced by the body and also contained in medication for anaphylactic shock.

Airway The passage from the nose/mouth to the alveoli (lungs).

Anaphylaxis/Anaphylactic Shock A severe allergic reaction that can be life-threatening if not treated rapidly. Symptoms include: difficulty breathing, swelling of the tongue and airway, red rash, itchiness.

Asthma An inflammatory disease of the lungs. Symptoms of an asthma attack include difficulty in breathing, chest tightness, coughing and wheezing. Sufferers may have attacks regularly or irregularly and will often be prescribed an asthma **inhaler** containing medication.

Automated External Defibrillator A device that is used during a cardiac arrest to assess, diagnose and, if appropriate, deliver an electric shock to the heart in an attempt to restore the heart rhythm.

Basic Life Support Opening the airway and maintaining breathing and circulation, without the aid of specialist equipment, for a person who is unable to do so for themselves.

Capillary Refill The time taken for colour, and therefore blood, to return to the capillary vessels after pressure has been removed. Typically, this is measured by squeezing the finger nail until the **nailbed** turns pale, releasing and counting the number of seconds before colour returns.

Cardiac Arrest The loss of heart function and therefore **circulation**. This is most commonly caused by an abnormal heart rhythm.

Cardio-Pulmonary Resuscitation (CPR) An emergency procedure performed to maintain circulation in a person who is unable to do so spontaneously.

Catastrophic Bleed See **Immediately Life-Threatening Bleed**

Casualty See **Ill or Injured Person**

Chain of Survival A sequence of steps shown to increase the chances of surviving a **cardiac arrest.**

Circulation The movement of blood through the body.

Clean Water For the purpose of this manual, water that is suitable for washing a wound. This would normally be water that is safe to drink or that has been boiled and cooled before use.

CPR See Cardio-pulmonary Resuscitation

C-Spine The part of the spine that makes up the neck and which is particularly vulnerable to injury from traumas such as road traffic collisions.

Cyanosis A blue or purple discolouration of the skin caused by a lack of oxygen. This is most readily observed on the inner part of the lips and the lower eyelids.

Defibrillation A treatment for certain types of cardiac arrest that involves giving an electric shock to the heart. The aim is to stop an irregular heart rhythm and allow the heart to re-establish its natural rhythm.

Diabetes A condition that impairs the body's ability to manage and transport sugar (glucose) in the blood.

Disaster Any large scale event that might cause harm to members of a community.

Epilepsy A common neurological condition involving abnormal electrical activity in the brain and that can lead to involuntary movements and bodily functions. See also: **seizure**

Fracture A broken bone (see also: **open fracture**)

Heart Arrest See **Cardiac Arrest**

Heart Attack An interruption in the flow of blood to the heart and its associated symptoms (including: chest pains, sweating and shortness of breath).

Hyperglycaemia Abnormally high levels of blood glucose that may be associated with a diabetic episode.

Hypoglycaemia Abnormally low levels of blood glucose commonly associated with a diabetic episode.

Ill or Injured Person A person in need of care due to an illness or trauma.

Immediately Life-Threatening Bleed An extreme bleed likely to cause death within minutes (Ref: UK Ambulance Service Clinical Practice Guidelines 2013).

Inhaler A device used to deliver medication into the lungs. Inhalers are commonly prescribed and carried by people with asthma and other breathing disorders.

Insulin A hormone produced by the body that allows glucose to be transported to the cells.

Level of Consciousness A measure of a person's responsiveness to various levels of stimuli.

Mobility For practical purposes, the ability of a person to walk with little or no assistance.

Myocardial Infarction See **Heart Attack**

Nailbed The tissue underneath the nails of the fingers and toes.

Open Fracture A broken bone that has penetrated the skin.

Passive Vomiting The tendency for the contents of the stomach to 'flow' back up the throat in an unresponsive person lying on their back.

Pressure Dressing A dressing that allows pressure to be applied to a wound to control bleeding, but does not stop blood flow in the limb.

Primary Survey The initial assessment of an ill or injured person for life-threatening problems. The focus of the primary survey is on airway, breathing and circulation (ABC).

Recovery Position A position used to protect the airway of an unconscious or semi-conscious person.

Secondary Survey A head-to-toe examination of an ill or injured person (damage/disability, expose and examine – DE). See also: **Primary Survey**

Seizure A loss of control of the body caused by abnormal electrical activity in the brain. Symptoms vary from mild to severe and may have various causes. See also: **Epilepsy**

Shock A shortage of oxygen being delivered to the body tissues, in particular the brain. Shock is recognised by a set of associated symptoms.

Spacer A device used to assist in the delivery of medication from a metered dose **inhaler** (aerosol). The device consists of a tube into which the aerosol may be sprayed before inhalation; it may be bought commercially or effectively improvised.

Stroke A loss of blood flow to part of the brain that is caused by either a blockage (clot) or a bleed and which can result in loss of function if not treated rapidly.

Trauma A serious injury to the body caused by a physical force.

Vacuum mattress A long mat which becomes rigid and conforms to a person's body shape when the air is removed from it.

Victim See **Ill or Injured Person**

Vital Signs Key indicators of the health or otherwise of a person and that can be measured by a First Responder. These include temperature, pulse, breathing and consciousness.

Methodology

When making a First Aid manual with practical recommendations, it is important to be clear about the basis for these recommendations. After all, recommending ineffective or harmful practices may cause more harm than good. This section describes the methods used to develop 'First Aid for First Responders', with the aim of making the best and most appropriate recommendations for practice.

The manual you are reading has been developed according to the principles of 'Evidence-Based Practice'. This means that the recommendations made in this manual are in accordance with the latest scientific findings, qhilst taking into account the practical experience of experts in the field and considering the resources, values and preferences of our target audience, the First Responder in Sub-Saharan Africa. A practical recommendation that is developed according to these principles is what we call an evidence-based recommendation.

The expert panel

We have developed this manual in collaboration with a panel of African experts with extensive experience in First Aid education and emergency medicine. As several of the experts involved are actual First Aid trainers from Red Cross National Societies in Sub-Saharan Africa, they are well-placed to represent our end users. The expert panel has been consulted throughout the development of 'First Aid for First Responders', from defining the table of contents through revision of the collected evidence and making practical recommendations to ensuring the usefulness and clarity of the illustrations.
The composition of the expert panel is as follows:

Name	Affiliation	Country
Prof. Dr. Heike Geduld, *Co-chair*	Stellenbosch University	South Africa
Dr. Navindhra Naidoo, *Co-chair*	Cape Peninsula University of Technology	South Africa
Mr. Fernel Campher	South Africa Red Cross Society	South Africa
Dr. Brian Kanaahe Mwebaze	Uganda Red Cross Society	Uganda
Dr. Pascal Kayiranga	Rwanda Red Cross Society	Rwanda
Ms. Pauline Makala Kilele	Tanzania Red Cross Society	Tanzania
Mr. Michael McCaul, Msc	Stellenbosch University	South Africa
Mr. Alick Barnet Msusa	Malawi Red Cross Society	Malawi
Mr. Golden Mukwecheni	Zimbabwe Red Cross Society	Zimbabwe
Dr. Hendry Sawe	Muhimbili University	Tanzania
Dr. Patrick Shao	Muhimbili University	Tanzania
Prof. Dr. Wayne Smith	University of Cape Town	South Africa
Assistant Prof. Dr. Benjamin Wachira	Aga Khan University, Nairobi	Kenya

Scope and content of the manual

During an online kick-off meeting in November 2018, the expert panel defined the scope and content of the manual. They defined key questions for which evidence needed to be collected.

Collection of the best available evidence

The Centre for Evidence-Based Practice (CEBaP) of the Belgian Red Cross (www.cebap.org) addressed the key questions defined by the panel of experts via systematic searches for scientific literature. The process is described briefly below. More information about how scientific literature was searched and collected can be found at www.cebap.org/methodology.

Key questions were defined according to the PICO (population-intervention-comparison-outcome) format and relevant scientific publications addressing these PICO questions were searched in three databases of scientific literature: Medline, Embase and the Cochrane Library, between December 2018 and March 2019.

In the event that key questions had already been addressed in the 2015 evidence-based resuscitation and First Aid guidelines of the International Liaison Committee on Resuscitation (ILCOR), we did not subject these to a new systematic literature search. Conclusions by ILCOR were then presented to our expert panel. Recommendations for basic First Aid interventions are in accordance with the 'Basic First Aid for Africa' manual of the Belgian Red Cross and the IFRC International First Aid and Resuscitation Guidelines, as these are also based on CEBaP evidence. However, where necessary these recommendations were adapted to the target group of First Responders.

We composed a total of 87 PICO questions on topics not addressed by ILCOR. Of these, 52 were updates of questions addressed in previous First Aid guidelines, while 35 were newly composed for this manual. For each of these PICO questions, we developed specific search strategies. To identify scientific studies with relevance to a PICO question, we developed formal criteria for eligibility

Data collection

Scientific evidence was collected for each of the 87 PICO questions in an evidence summary by CEBaP. You can consult the evidence summaries developed for 'First Aid for First Responders' in the evidence summary database of CEBaP (http://www.cebap.org/knowledge-dissemination/first-aid-evidence-summaries/).

We judged the credibility of the identified evidence for each PICO question according to the methods developed by the GRADE working group (1). For each PICO question, a level of certainty of the evidence was applied, ranging from high to very low:

- High certainty: We are very confident that the true effect lies close to that of the estimate of the effect.
- Moderate certainty: We are moderately confident about the effect estimate. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
- Low certainty: Our confidence in the effect estimate is limited. The true effect may be substantially different from the estimate of the effect.
- Very low certainty: We have very little confidence in the effect estimate. The true effect is likely to be substantially different from the estimate of effect.

From scientific evidence to practical recommendations

Dedicated content writers wrote a draft version of this manual, based where possible on scientific findings collected in the evidence summaries. The collected evidence and the draft manual were revised by the expert panel, who provided written feedback.

The expert panel then further discussed their feedback during a two-day meeting in March 2019, taking into account the concepts of the GRADE Evidence-to-decision framework (2):

the balance between benefits and harms, certainty of the evidence, patient values, cost, acceptability and feasibility of a proposed action.

A revised version of the manual was prepared and sent out for revision. During a third online meeting in May 2019, the experts validated the content of the manual, after which the manual went to the layout stage and illustrations were prepared.

Internal validation

The final version of this manual, with illustrations, was circulated electronically and approved by the expert panel. The chairs of the expert panel revised and addressed any remaining comments.

Update

This manual will be updated every five years. The next update is scheduled for 2024.

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Colophon

First Aid for First Responders in Africa

Written by Gillian Dacey and Dr. Martin Akhurst, Crisis Resilience International

Drawings by Myrthe Boymans, Mixed Art

Photographs by Corrie Butler/IFRC (cover and back, page 82, 110, 164 and 176), Juozas Cernius/IFRC (page 10, 16, 32, 62, 102 and 142), Australian Red Cross/IFRC (page 48), Malawi Red Cross (page 56) and Ricardo Gangale (page 154)

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Belgian Red Cross
Motstraat 40
B-2800 Mechelen
Belgium

www.rodekruis.be
afam@redcross.be

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How do you provide First Aid assistance during a mass-casualty incident? What do you do in case of a catastrophic bleed? In clearly explained steps and illustrated with drawings, this manual explains how to act as a First Responder.

'First Aid for First Responders in Africa' seeks to equip First Responders with advanced First Aid knowledge and skills needed to effectively act as a First Responder in the daily life of our communities as well as during emergencies or disasters. This book has been written in an easy-to-understand way in order for First Responders to deal with a variety of challenging situations.

Helping people to help others is crucial for the Red Cross/Red Crescent movement. This manual will contribute to increase the self-reliance of First Responders in daily life and during emergencies. It is organized in 13 different chapters, each covering a different aspect of what a First Responder needs to know to give proper care to people in need.

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