



FIRST IN FIRST AID

A New Zealand First Aid
Reference Guide

First Aid Book: January 2021

Triple One Care First Aid Book: Contents

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Primary New Zealand References

- ANZCOR Guidelines for First Aid (November 2017)
- New Zealand Red Cross - Essential Emergency Care for First Aiders (2014)
- NZ Mountain Safety Council - NZ Outdoor First Aid (3rd Edition 2012)

Introduction

Definition & Philosophy

The primary focus of First Aid Training is to provide you with the skills and knowledge necessary to minimise the effects of accidents or illnesses. First aiders provide a primary response to emergencies within the community and may sometimes be first and only person on the scene, resulting in the need to remain calm and be able to make the right decisions in a situation dominated by emotional stress and anxiety.

Definition of First Aid:

First Aid is the emergency care and treatment of a sick or injured person before more advanced medical assistance, in the form of the emergency medical services (EMS) arrives.

Responsibilities of a first aider:

- **Preserve** life and provide initial emergency care and treatment to sick or injured people
- **Protect** the unconscious
- **Prevent** a casualty's condition from becoming worse
- **Promote** the recovery of the casualty

Philosophy of First Aid:

In the pre-hospital setting, the key contributors to survival and recovery from illness and injury are prompt and effective maintenance of the body's primary functions:

- Response
- Airway
- Breathing
- Circulation
- Bleeding control (life threatening)

Medical research data suggests that effective support of these basic functions provides the most significant contribution to positive outcomes for casualties in the pre-hospital setting.

Exposure to Biological Hazards

Health & Safety

First aiders may be exposed to biological substances such as blood or air borne pathogens and communicable diseases, whilst dealing with a first aid incident.

These may result from dealing with:

- Trauma related injuries
- Resuscitation

There are many different blood/airborne pathogens that can be transmitted from a penetrating injury or mucous exposure, in particular, Hepatitis B Virus, Hepatitis C Virus and Human Immune deficiency Virus (HIV). Other diseases not found in human blood may be carried in fluids such as Saliva (e.g. Hepatitis A and the organism that causes meningitis) or animal blood and fluid.

Universal Precautions:

First aiders should equip themselves with and use personal protection equipment. This equipment is used to minimise infection from disease.

Exposure sources:

The following are common sources of exposure:

- All human body fluids and secretions, especially any fluid with visible blood
- Any other human material.

Exposure routes:

The following are typical means of exposure:

- Punctures or cuts from sharp objects contaminated with blood / fluid
- A spill of blood / fluid onto mucous membranes of the eyes, mouth and/or nose
- A spill of blood / fluid onto skin that may or may not be intact
- A laceration and contamination with blood/fluid from a bite.

The expression 'universal precautions' refers to the risk management strategy used to prevent the transmission of communicable disease, by reducing contact with blood and other body substances.



Disposable Gloves



CPR Face Shield



CPR Pocket Mask

Universal precautions include:

- Wearing appropriate personal protective equipment for the task (PPE)
- Treating all persons as if infectious
- Washing following completion of task
- Appropriate disposal of disposable protective items and/or equipment
- Maintaining good hygiene practices before, during and after tasks involving contamination risk.

Note: *Universal Precautions are the most effective approach to protecting emergency first aiders in a biological substance exposure situation. If these guidelines are followed, the risk of infection can be significantly minimised.*

Immediate action at scene following exposure to poison/corrosive substance:

For an open wound

- Encourage the wound to bleed, thoroughly wash with water for 15 minutes and dress
- Do not attempt to use a caustic solution to clean the wound
- Seek medical advice as soon as possible

For a splash to a mucous membrane

- Flush splashes to nose, mouth or eyes thoroughly with water for 15 minutes
- If the splash is in the mouth, spit out and thoroughly rinse out with water for 15 minutes
- If the splash is in the eyes, irrigate with the eyes open for 15 minutes
- Seek medical advice as soon as possible.

For a splash to the skin

- At the scene, wash thoroughly with soap and water
- Seek medical advice as soon as possible if the exposure is medium / high risk.

Wellness for yourself and others

Health & Safety

We can all experience emotional thoughts, and this is a normal reaction however It is important when dealing with a stressful situation that we find a way to cope and that we are looking after one another. Coping strategies may include talking to a particular person such as a family member, friend, or a work colleague. There are also many associations that offer help.

These are often available through work (peer support), local or national counselling.

At the scene of an incident look for any signs of stress not only in the patient but also with others not forgetting yourself. Signs of stress can be Emotional, Physical, Behavioural.

Signs to look out for may include:

Emotional – crying, panic, confusion, fear, hostility, denial, depression, feeling of worthlessness, suicidal thoughts.

Physical – nausea, vomiting, chest pain, headaches, difficulty breathing, exhaustion, lack of sleep.

Behavioural – increased alcohol or drug use, loss of motivation, chronic forgetfulness, lack of decision making/ poor judgements, flashbacks and distressing dream.

These signs can manifest on the day but can also emerge later and in some cases many months/years down the line. Therefore, it is important to look out for these signs and seek help, debriefing is a good way to start. Find a person to talk too, it needs to be a safe environment to open up and to someone who will not judge and not gossip. Find things that make you happy do not dwell on the negatives, look for the positives. **Peer support** – is confidential, professional, safe support from trained colleagues who understand the work you do and is often available in your workplace.

They can promote staff/self-awareness and arrange referral to appropriate services if required.

Talk to your manager to see what support is available in your workplace.

The **primary assessment survey** is a systematic checklist designed to maximise safety and identify / treat immediate life-threatening problems.

The steps to be followed for an adult, child and infant casualty are remembered by the letters

DRSABCD:

- D - Danger**
- R - Response**
- S - Send for help**

- A - Airway**
- B - Breathing**
- C - CPR (Cardiopulmonary Resuscitation) + Control Major Bleeding**
- D - Defibrillation**

Note: *CPR is continued until responsiveness or normal breathing returns, or EMS instruct you to stop, or the first aider can no longer continue due to exhaustion.*

Why do you need to know this?

It is very important that you understand the correct procedure in order to offer effective primary care. At the same time, it is necessary to protect yourself from any harm. The initial steps of resuscitation are:

D - Danger!

Before approaching any situation, you must assess the scene for any threat to:

- You and anyone else assisting with the situation
- Bystanders near the scene
- The casualty or casualties

By rushing into the situation without properly assessing what has occurred, you are compromising your safety. If you are injured while attempting to assist the casualty, you will be unable to help them. If the scene is not safe, remove the threat from the casualty (or the casualty from the threat). If this cannot be achieved, go to a safe place, and wait for further assistance.

Safety Note:

Always remember to re-assess the safety while treating the casualty. Bystanders should be warned about any dangers and kept at a safe distance to ensure they do not become casualties. Once the scene is considered safe, bystanders can be asked to assist if needed.

Remember to ELIMINATE or MINIMISE hazards!

Moving a casualty?

A rescuer should only move a collapsed or injured patient.....

- To ensure the safety of both rescuer and the patient
- Where extreme weather conditions or difficult terrain indicate that movement of the patient is essential
- To make possible the care of airway, breathing, and circulation (e.g. turning the unconscious/ breathing patient onto their side to maintain their airway / an unresponsive not breathing normally patient onto their back to perform cardiopulmonary resuscitation effectively)
- To make possible the control of severe bleeding.

All unconscious persons who are breathing normally must remain on their side (injuries permitting). It is reasonable to roll a face-down unresponsive patient into the supine (back) position to assess airway and breathing and initiate resuscitation. Concern for protecting the neck should not hinder the evaluation process or lifesaving procedures.

When ready to move the patient:

- Avoid bending or twisting the patient's neck and back: remember, spinal injury can be aggravated by rough handling
- Try to have three or more people to assist in the support of the head and neck, the chest, the pelvis and limbs
- A single rescuer may need to drag the patient (either an ankle drag or arm-shoulder drag is acceptable)
- Make prompt arrangements for transport by ambulance to hospital
-

REMEMBER: We move Patients when it is life threatening.

R – Response:

Overview:

Unresponsiveness is where the patient cannot be roused, is unaware of their surroundings and no purposeful response can be obtained.

When checking a person's response, you are assessing how well their brain is functioning. The brain requires a constant supply of oxygenated blood and glucose to function. Interruption of this supply will cause loss of consciousness and will result in permanent brain damage in minutes. When the casualty's brain is not functioning normally, they may not be able to look after their own airway. Their protective reflexes of coughing, swallowing, or gagging may not be working very well.

Causes of unconsciousness:

The causes of unconsciousness can be classified into four broad groups:

- Blood oxygenation problems (heart attack)
- Blood circulation problems (trauma, blood loss)
- Metabolic problems (e.g. diabetes, overdose, alcohol)
- Central nervous system problems (e.g. head injury, stroke, tumour, epilepsy, spinal injury)

How to check for responsiveness:

Assess the collapsed victim's response to verbal and tactile stimuli ('talk and touch'), ensuring that this does not cause or aggravate any injury. Give a simple command such as, "open your eyes, squeeze my hand, let it go". Then grasp or tap the patient's shoulder firmly to elicit a response.



Checking for a response

The **four levels of responsiveness** are:

A - Alert: The casualty is alert and responsive. You can have a logical conversation with them.

V - Voice: Even if drowsy, the casualty is able to reply when you talk to them.

P - Pain: The casualty is responsive to pain when applied.

U - Unresponsive: The casualty is unresponsive to all stimuli.

If the casualty is breathing normally but is unresponsive, place them in a **stable side position**, to maintain their airway or manually hold their head tilted back to ensure an open airway. Release of the head will allow the airway to close.

Note: When possible, always approach the casualty from the direction of the head (for safety).

S - Send for help: Activating the Emergency Medical Services (EMS)

'**Activating EMS**' means choosing an Emergency Medical Service response appropriate to the severity of the injury or illness and the situation encountered.

Summoning help may be by using ☎️ **1-1-1**, or other means e.g. radio, beacon etc.

However, in addition to the 'normal' emergency services, secluded / remote locations may have local **networks** for emergency response. Researching the availability of these responders, is an important part of pre-planning for outdoor activities.

The level of help selected needs to be considered on an **individual basis**. It may for instance, be appropriate to contact a local general practitioner (GP), Nursing Services, Healthline, A&E Clinics, the NZ National Poisons Centre or utilize the skills of a group member that has medical experience.

If you are in doubt as to which level of help is required, activate the **Emergency Medical Services** (Ambulance) as a safeguard!

Useful Phone Numbers:

- **Emergency Medical Services:** ☎ 111 (emergency)
- **Healthline:** ☎ 0800 611 116 (non-emergency health issues)
- **NZ National Poisons Centre:** ☎ 0800 764 766 (0800POISON) (information)

A - Airway:

Overview

When a Patient is unconscious, all muscles are relaxed. If the patient is left lying on their back, the tongue, which is attached to the back of the jaw, falls against the back wall of the throat and blocks air from entering the lungs. Other soft tissues of the airway may worsen this obstruction. The mouth falls open, but this tends to block, rather than open, the airway. The unconscious patient is further at risk because of being unable to swallow or cough out foreign material in the airway. This may cause airway obstruction, or laryngeal irritation and foreign material may enter the lungs. For this reason, the rescuer should not give an unconscious victim anything by mouth and should not attempt to induce vomiting.

Key point:

In an unconscious patient, care of the airway takes precedence over any injury, including the possibility of spinal injury. Airway management is high priority. It is important to check the airway before the breathing. If air cannot enter the lungs due to some sort of blockage, the casualty will not survive for long.

Airway management is required to provide an open airway when the patient:

- Has a lower level of response.
- Has an obstructed airway.
- Needs rescue breathing.

Airway obstruction:

If during resuscitation the airway becomes compromised, the patient should be promptly rolled onto their side to clear the airway. The patient should then be reassessed for responsiveness and normal breathing. Most airway problems are caused by the tongue and/or vomit. These can often be resolved by simple airway management.

Tongue:

The muscle tone of the upper airway is directly related to the level of responsiveness: when sleeping, for example, minor degrees of reduced muscle tone may lead to sufficient obstruction to cause snoring. When unresponsive, however, this obstruction can become complete and fatal.

Vomit:

Food remains in our stomach for hours, patients will likely have food in their stomachs and it is possible for this food to regurgitate up from the stomach into the lungs. This is called **aspiration**. The acidity of the stomach contents and the particle size can block and damage the airway. Regurgitation is a passive process caused by a rise in stomach pressure overcoming the sphincter. It is usually caused by a full abdomen, obesity (weight on the stomach) or air.

How to check an Airway:

- Opening the mouth and look for foreign objects
- Remove a foreign object (only if the object can be seen) by turning the casualty on to the stable side position and sweep the mouth with a gloved finger)
- Return the casualty onto their back and perform a “Chin-lift head tilt” to open the airway.

Chin-lift and Head-tilt:

Adults and Children (a child is defined as one year to eight years of age).

One hand is placed on the forehead or the top of the head. The other hand is used to provide Chin Lift. The head is tilted backwards **without placing your hand under the neck**. It is important to avoid excessive force, especially where neck injury is suspected. Wherever possible make sure that you are wearing barrier gloves.

Chin lift is commonly used in conjunction with Backward Head Tilt. The chin is held up by the rescuer’s thumb and fingers in order to open the mouth and pull the tongue and soft tissues away from the back of the throat. One technique involves placing the thumb over the chin below the lip and supporting the tip of the jaw with the middle finger and the index finger lying along the jaw line. Care is required to prevent the ring finger from compressing the soft tissues of the neck. The jaw is held open slightly and pulled away from the chest.



Head tilt / Chin lift

Finger sweep:

The finger sweep is used to clear the mouth of fluid and debris in the unresponsive patient. It should only be performed if you can see something to remove. It should always be performed with a gloved hand with the patient positioned on their side in a stable side position. Sweep the patient’s mouth with your gloved finger perform a single sweeping motion to the opposite side, flicking out vomit, blood, and debris which may fall out just by placing the patient on their side.

Infants:

An infant is defined as younger than one year.

The upper airway in infants is easily obstructed because of the undeveloped narrow nasal passages, the entrance to the windpipe (vocal cords) and the trachea (windpipe). The trachea is soft and pliable and may be distorted by excessive backward head tilt.

Therefore, in infants, the head should be kept **neutral** and maximum head tilt not used. The lower jaw should be supported at the point of the chin with the mouth open. There must be no pressure on the soft tissues of the neck. If these manoeuvres do not provide a clear airway, the head may be tilted backwards very slightly with a gentle movement.



Neutral Alignment: Infant Airway Position

Breathing:

Normal breathing is essential to maintaining life. Patients who are gasping or breathing abnormally and are unresponsive require resuscitation.

Common causes of absent or ineffective breathing:

- Direct depression of/or damage to the breathing control centre of the brain
- Upper airway obstruction
- Paralysis or impairment of the nerves and/or muscles of breathing
- Problems affecting the lungs
- Drowning
- Suffocation
- Cardiac arrest due to trauma or medical illness.

Signs of ineffective breathing may include:

- Little or unusual chest movement
- Weak or abnormal breath sounds (wheezing, fluid sounds when breathing etc)
- Occasional gasps
- Reduced responsiveness
- Anxiety
- Unusual skin colour (pallor)
- Rapid or slow breathing
- Unusual posture.

How to check for breathing:

The rescuer should -

- **LOOK** for movement of the upper abdomen or lower chest
- **LISTEN** for the escape of air from nose and mouth
- **FEEL** for breath on the side of your face / movement of the chest and upper abdomen.
- **This should take you no longer than 10 seconds.**



Checking for breathing

If the unconscious patient is unresponsive and not breathing normally after the airway has been cleared and opened with chin lift- head tilt, the rescuer must immediately commence cardio-pulmonary resuscitation (CPR) by performing chest compressions and rescue breathing. Give 30 compressions and then two breaths continuously.

Note: *If unable to perform ventilations, rescuers should deliver **compression only CPR!** (Perform compressions continuously without delivering breaths)*

Rescue breaths:

Kneel beside the patient's head. Maintain an open airway. Use resuscitation barrier device. Take a breath, open your mouth as wide as possible and place it over the patient's slightly open mouth. Whilst maintaining an open airway pinch the nostrils and blow to inflate the victim's lungs.

For mouth-to-mouth ventilation, it is reasonable to give each breath in a short time (a one second with a 2 second pause followed by another 1 second breath) The breath volume is to achieve chest rise regardless of the cause of collapse. Care should be taken not to over-inflate the chest.

Look for rise of the patient's chest whilst inflating. If the chest does not rise, possible causes are:

- Obstruction in the airway (inadequate head tilt, chin lift, tongue occlusion or foreign body)
- Insufficient air being blown into the lungs by the rescuer
- Inadequate air seal around mouth and or nose.

If the chest does not rise, ensure correct head tilt, adequate air seal and ventilation. Following inflation of the lungs, lift your mouth from the victim's mouth, turn your head towards the patient's chest and look for chest relaxation, listen for air being exhaled from the mouth and nose and feel air movement from the victims mouth on to your cheek.



Rescue breathing using universal precautions

Mouth to nose:

The mouth to nose method may also so be used where the rescuer chooses, or the patient's jaws are tightly clenched, or when resuscitating infants and small children. The technique for mouth to nose is the same as for mouth to mouth except for sealing the airway. Close the patient's mouth with the hand supporting the jaw and push the lips together with the thumb. Use a resuscitation barrier devise.

Take a breath and place your widely opened mouth over the patient's nose (or mouth and nose in infants) and blow to inflate the patient's lungs. Lift your mouth from the patient's nose and look for the fall of the chest; listen and feel for the escape of air from the nose and mouth. If the chest does not move, there is an obstruction, an ineffective seal, or insufficient air being blown into the lungs.

In mouth to nose resuscitation, a leak may occur if the rescuer's mouth is not open sufficiently, or if the patient's mouth is not sealed adequately. If this problem persists, use mouth to mouth resuscitation. It may be found that blockage of the nose prevents adequate inflation. If this occurs, mouth to mouth resuscitation should be used

C – Cardiopulmonary Resuscitation (CPR)

Effective CPR - 30 compressions followed by 2 Breathes

CPR is a repetitive cycle of:

1. Airway opening.
2. Chest compressions
3. Rescue breathing

External chest compression is the most effective way of artificially circulating blood. Chest compressions are accompanied by rescue breathing which provides oxygen that the blood delivers around the body to vital organs. This is the only effective way to keep the heart and brain oxygenated as soon as a defibrillator is available get it on.

Recognition of the need for chest compressions:

First aiders should use unresponsiveness and absence of normal breathing to identify the need for resuscitation. Feeling for a pulse is unreliable and should not be performed to confirm the need for resuscitation.

When should CPR be performed?

CPR should be performed on patients who are not breathing or unresponsive and breathing inadequately. Sometimes a casualty suffering a cardiac arrest may occasionally gasp, but this does not constitute breathing.

When not to perform CPR:

You should not perform CPR:

- When it is too dangerous to rescuers
- When there are obvious signs of death, for example rigor mortis or injuries incompatible to life (decapitation)

Perform CPR if you are unsure whether to commence and continuously assess.

Complications:

Broken ribs are not uncommon during CPR. If this occurs, check your hand position and continue. You can reduce the chance of breaking ribs by placing your hands in the correct “centre of the chest” position.

Broken ribs will decrease the effectiveness of chest compressions in generating blood flow, but this cannot always be avoided.

Reassessment:

Pauses in CPR are associated with reduced survival. Reassess only when you see signs of life (coughing, breathing, or movement). This should take no longer than 10 seconds. If the patient begins to show signs of life during CPR, reassess the breathing using ABC's. If the patient is breathing, place them on to their side and monitor airways continuously.

When to stop CPR:

You must perform CPR uninterrupted until one or more of the following happens:

- The casualty recovers enough and is able to breathe on their own
- You are placed at significant risk
- You cannot continue due to exhaustion
- Advanced help arrives and takes over the care of the casualty.

Compression only CPR:

If rescuers are unable to do rescue breathing, they should do the chest compressions only (the survival outcome is reduced). If chest compressions only are given, they should be continuous at a rate of 100-120 per minute uninterrupted.

Locating the site for chest compressions:

For a patient receiving chest compressions, rescuers should place the heel of their hand in the centre of the chest with the other hand on top. (Armpit line in adults, middle of the nipple line for children and infants).

Compression applied too high are ineffective and, if applied too low may cause regurgitation and/or damage to internal organs.

Method of compression:

Children and Adults

- Two hand technique is used for performing chest compressions in adults
- One hand (or two hand technique depending on the size and strength of the person performing CPR and the size of the patient) in the centre of the chest is used to perform chest compressions on children under 8 years old.
- Chest should be compressed 1/3 the depth of whoever you are performing compressions on (be it an adult/child/infant).



(Adult) 2 Handed CPR

Infants

In infants the two-finger technique should be used to deliver compressions. Having obtained the compression point in the centre of the chest between the nipple line, the rescuer places one finger on this point, places the other finger below the first finger in line with the sternum and compresses the chest. The rescuer must avoid either rocking backwards and forwards or using thumps or quick jabs. Rescuers should allow complete recoil of the chest after each compression.

Depth of compression:

- Push down approximately one third of the depth of the chest with each compression and allow the recoil.

Rate of chest compressions:

Rescuers should perform chest compressions for all ages at a rate of **100-120 compressions per minute** (Push hard and fast).

CPR quality:

“Flow time” is the enhancement of CPR by ensuring that continuous CPR is performed with the least number of interruptions. As those performing CPR are maintaining the heart, oxygenation and circulation of the casualty, interruptions, poor compression rate and depth, inadequate ventilations and periods of “no CPR” will negatively affect the viability and outcome of the casualty.

When performing compressions, if feasible, change rescuers at least every two minutes, to prevent rescuer fatigue and deterioration in chest compression quality (particularly depth). Changing rescuers performing chest compressions should be done with minimal interruptions to the compressions.

Defibrillation:

Attach an **Automated External Defibrillator (AED)** if it's available and follow the instructions given by AED.

There are several brands of AED's available in NZ. They are all effective, but there are differences in their design and operation. If you have regular access to an AED, it is important that you familiarise yourself with its operation.

The heart is a muscle that pumps blood around the body. This function is achieved through a mechanical contraction of the heart initiated by a coordinated electrical stimulation from within the heart. When the rhythmic electrical activation of the heart becomes abnormal, the heart muscle contraction can become less effective. Ventricular fibrillation (VF) is a catastrophic rhythm disturbance where electrical activation becomes uncoordinated. As a result, small parts of the heart muscle contract rapidly and the heart stops effectively pumping blood, leading to a cardiac arrest.

Ventricular fibrillation is most commonly caused by a heart attack (a blocked artery within the heart) and is the leading cause of sudden death: people in VF begin to lose responsiveness immediately and without appropriate treatment this condition is fatal. CPR will keep some blood flowing to the brain, but it will not correct the ventricular fibrillation.

The most effective method that will reliably stop VF and allow restoration of a normal coordinated electrical cardiac rhythm is a large electric shock. This procedure is called defibrillation. The chance that defibrillation will work is governed by time. For **every minute** of delay in receiving a defibrillating shock, a person's chance of surviving the event decreases by about **10%**.

An Automated External Defibrillator – AED, is a device that has been designed for a person with little or no training to effectively and safely defibrillate a casualty within 60 seconds.



To operate an AED:

1. Turn the device on (there will be a clearly marked On/Off button).
2. Once the device is turned on, the device provides audible prompts.
3. Follow all the instructions given by the AED.

Safety considerations:

Always keep in mind the following safety considerations:

- Do not touch the casualty when shocking, make sure everyone is clear
- Do not use the AED in flammable environments
- Do not use the AED on casualties who are lying in water
- Do not use the AED on casualties who are lying on metal surfaces.

Indications for use:

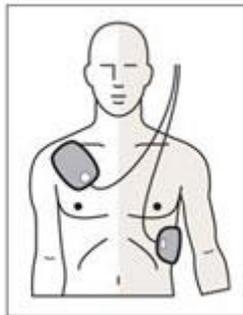
The AED should be used on all unresponsive casualties who are not breathing normally or not breathing.

Placement of pads:

Follow the manufacturer's directions for specific placement of pads on the patient's body.

Preparation of the casualty may require you to

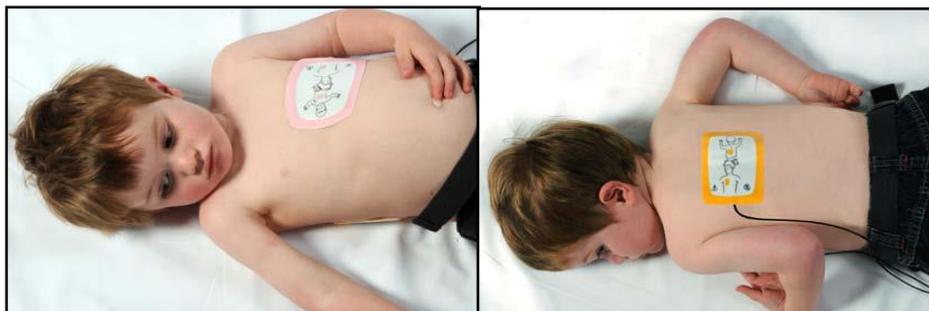
- 1 Cut/remove clothing, expose the chest for pad placement onto bare skin. Remove the bra.
1. Using a razor (if provided), to quickly remove excess hair to assist with adhesion of the pads.
2. Dry the chest of excessive moisture to assist with adhesion.



Pad placement on an adult

Using an AED on children and infants:

There are specific child pads designed to reduce the size of the shock delivered to children aged 1 to 8, and they should always be used if available. If the AED does not have a paediatric mode or paediatric pads, then the standard adult AED and pads are to be used. Ensure the pads do not touch each other on the child's chest. This may require one pad is placed in the centre of the chest and the other pad in the centre of the back. Support flow time by organised deliberate application with the minimal amount of interruption to CPR



Safety Note: AEDs are to be used on an infant with adult pads if infant pads are not available. Listen carefully to the AED prompts.

Positioning an unconscious, breathing victim:

With an unconscious casualty, care of the airway takes precedence over any injury. If a casualty is to be left unattended or is vomiting – protection of the airway is more important than protecting a neutral spine. In this case, turn them over, use the finger sweep if necessary and put them in the stable side position. As unconscious casualties cannot provide feedback, victims must be handled gently, and every effort made to avoid any twisting or forward movement of the head and spine.

A stable side position (recovery position) is the single most effective method of providing and maintaining a clear airway in the unresponsive, breathing casualty.

The stable side position:

- Allows the tongue to fall to the side instead of the back of the throat allowing air to pass enabling the patient to maintain a clear airway.
- Facilitates drainage and reduces the risk of inhaling foreign material.
- Is suitable for any unresponsive, breathing casualty, who must be left alone for any reason.

Many versions of the stable side position exist. When considering the specific position to be used, the following principles should be observed:

- The patient should be placed on their side with the head tilted, to allow free drainage of fluid
- The position should be stable
- Any pressure on the chest that impairs breathing should be avoided
- It should be possible to turn the patient onto the side and return to the back easily and safely, having regard to the possibility of cervical spine injury
- Good observation of and access to the airway should be possible
- The position itself should not give rise to any injury to the patient
- Rescuers should continuously assess for and manage deterioration.

Procedure:

1. Kneel beside the patient and check the patient's pockets for anything that could injure them during the manoeuvre.
2. Move the patient's lower arm to a position approximately 90° from their torso.
3. Kneel so that you roll the patient toward you, pulling from the patient's hip and shoulder.
3. Once the patient is on their side, tilt their head back to ensure an open airway.
4. Move the patient's uppermost knee and arm to a position approximately 90° from their torso.



Adult / Child Stable Side Position



Infant Stable Side Position

If a casualty is to be left unattended or is vomiting – protection of the airway is more important than protecting a neutral spine. Turn them over, use the finger sweep if necessary and leave them in a stable side position to maintain an airway. Continually monitor breathing and make sure that the airway is clear and open.

Bag Valve Mask (BVM) Resuscitator

Ventilation

A **Bag Valve Mask (BVM) Resuscitator** is a manually operated air/oxygen delivery device, suited to casualties who are not breathing normally or not breathing. It has a reservoir bag attached that increases the delivery of oxygen (if fitted). Some organisations have a BVM Resuscitator as part of their first aid equipment.



Bag / Valve / Mask Device

Technique:

- Ensure that the BVM is assembled correctly.
- Make sure the casualty is positioned on their back.
- Manually open the airway, head tilt, chin lift and maintain it open at all times.
- Assess breathing, look, listen and feel.
- Position yourself at head of the casualty, supporting their head with your knees supporting the airway to remain open.
- Place the BVM facemask over the casualty's mouth and nose and apply a C / E grip.
- Press downward on the facemask with your thumb and forefinger. Make sure air does not leak out around the facemask – this is known as the 'C grip'.
- Position the remaining three fingers under the line of the chin, so that you can lift the chin and tilt the casualty's head back. The "E grip" opens the airway. Make sure the airway remains open.
- Compress the bag delivering a puff of air into the casualty's lungs.
- Check that the casualty's chest rises and falls adequately, avoid over inflation.
- If there is no chest movement, recheck the airway and the mask application. Ensure the airway is open.
- Continue with ventilations and attach oxygen if available. Ventilations should be given at the rate of 2 ventilations after 30 chest compressions.

Complications:

Care must be taken to ensure that the airway is open, and that air does not escape around the edge of the mask. If the chest fails to rise, recheck the equipment, reposition the airway using head-tilt / chin-lift and then consider the two-person technique. Excessive pressure may cause stomach distension (ballooning) possibly causing the casualty to vomit. If vomiting occurs, roll the casualty onto their side and clear the airway.

Notes:

BVM distances rescuer from patient's body fluids

BVM delivers 21% O₂ rather than 17% from mouth to mouth (not connected to O₂ bottle)

BVM delivers highest concentration O₂ when delivered with medical O₂

BVM makes it easy to see chest for effectiveness and manage from the head

BVM can be used with over the head CPR for effective one person CPR

Oropharyngeal Airway:

This airway is specifically for use on unresponsive casualties and is the **simplest** and most common artificial airway. It is sometimes referred to as the 'Guedel' or 'O-P' airway. The airway is particularly useful where a constant head extension, chin-lift is required.

Cardiac Arrest & The Chain of Survival

Interventions

Cardiac arrest occurs when the heart is no longer able to effectively pump blood around the body. If not treated, this will cause death within minutes. One of the consequences of cardiac arrest is the disruption of the electrical activation of the heart. When this happens, the heart muscle can rapidly contract in an uncoordinated fashion. This rhythm is called **ventricular fibrillation (VF)**. While a heart attack is the most common cause of cardiac arrest, it is not the only cause and the majority of people who suffer a heart attack do not have cardiac arrest.

Adult chain of survival:

The key steps to surviving a cardiac arrest in adults are described as the **adult chain of survival**. There are four links in this chain and each one needs to occur promptly to ensure survival.

1. **Early recognition and 111 activation** for Emergency Medical Services (EMS).
2. **Early CPR** to maintain artificial ventilation and circulation until the EMS arrives.
3. **Early defibrillation** to deal with the heart's electrical problems.
4. **Early advanced medical care by the EMS.**
5. **Early advanced life support and post arrest care.**

Chain of survival



The survival rate after cardiac arrest has increase due to the increased availability of community/workplace AEDs. Defibrillation is time-critical, with the chances of survival decreasing by approximately **10%** for **every minute** you delay defibrillating. Checkout the free New Zealand App “**AED Locations**” that will identify the closest AED to you when activated.

Foreign Body Airway Obstruction (Choking)

Interventions

Overview

Airway obstruction may be **partial** or **complete** and may be present in the conscious or the unconscious patient. Some typical causes of airway obstruction may include, but are not limited to:

- Relaxation of the airway muscles/tongue due to unconsciousness.
- Inhaled foreign body.
- Trauma to the airway.
- Anaphylactic reaction leading to swelling of the airway.

The signs and symptoms of obstruction will depend on the cause and severity of the condition. Airway obstruction may be gradual or sudden in onset and may lead to complete obstruction within a few seconds. Consequently, the patient should be observed continually.

In the conscious victim who has inhaled a foreign body, there may be extreme anxiety, agitation, gasping sounds, coughing or loss of voice. This may progress to the universal choking sign (clutching the neck with the thumb and fingers).



Universal Choking Sign

Airway obstruction:

There are two types of airway obstruction:

Partial:

- Breathing is laboured.
- Breathing may be noisy.
- Some escape of air can be heard or felt from the mouth.

Full:

- Distress with signs of effort to breathe.
- There is no sound of breathing.
- There is no escape of air from nose and/or mouth.

Airway obstruction may not be apparent in the non-breathing unresponsive patient until rescue breathing is attempted.

Signs and symptoms:

The indications that someone may be struggling with an obstruction are:

- Panic
- Grasping the throat
- Inability to speak
- Inability to breathe
- Colour of face (pallor)
- Inability to cough.

Treatment for choking adults and children

Effective Cough (Partial Airway Obstruction)

- A patient with an effective cough should be given reassurance and encouragement to keep coughing to expel the foreign material.
- If the obstruction is not relieved the rescuer should call an ambulance.

Ineffective Cough (Full Airway Obstruction):

Conscious Patient

- If the patient is conscious, call an ambulance
- Perform up to **five sharp, back blows** with the heel of one hand in the middle of the back between the shoulder blades. Check between each back blow to see if it has relieved the airway obstruction. The aim is to relieve the obstruction with each blow rather than to give all five blows.



Supporting the patient / Delivering back blows

- If back blows are unsuccessful the rescuer should perform up to **five chest thrusts**. Check between each thrust to see if the chest thrust has relieved the airway obstruction. The aim is to relieve the obstruction with each chest thrust rather than to give all five chest thrusts.
- To perform chest thrusts, identify the same compression point as for CPR (centre of the chest) and give up to five chest thrusts. These are similar to chest compressions but sharper and delivered at a slower rate. **Children and adults** may be treated in the sitting or standing position. If the obstruction is still not relieved, continue alternating five back blows with five chest thrusts.

Unconscious Patient

The finger sweep can be used in the unconscious victim with an obstructed airway if solid material is visible in the airway. If the patient is non-responsive and not breathing (normally) **Commence CPR immediately!**

Treatment for choking infants (less than 1 year):

The following procedure is for a choking infant:

- Check to see if the obstruction can be cleared using the finger sweep.
- Lay the infant in a lying face down position over your forearm, supporting the baby's face and body with your arm. The infant's body should be inclined downwards to utilise the effects of gravity.
- Deliver up to five back slaps between the infant's shoulder blades, check after each back slap.
- If the obstruction is still present, turn the infant onto their back, again with the body inclined.
- Deliver up to five chest thrusts in the centre of the chest between the infant's nipples (same location as CPR) using two fingers, check after each chest thrust.
- Repeat this process until the obstruction is cleared or the infant becomes unresponsive.
- Commence CPR if the infant becomes unresponsive.

The secondary assessment/survey is a systematic and thorough **head-to-toe check (down front and back)** of the injured or ill casualty. It is performed **after** the primary assessment to identify any significant injuries. In an injured casualty, this is achieved through a body sweep, in an attempt to identify any obvious injuries such as fractures or bleeding.

The secondary assessment is also useful to obtain information for more advanced medical assistance. Questioning techniques such as **SAMPLE** and **PQRST** and the recording of **vital signs** can provide further information that may assist in the treatment of the casualty.

The secondary assessment is also useful to obtain information for more advanced medical personal when they arrive. The assessment should not take any longer than 1–2 minutes. If the casualty is responsive, you need to talk to them and explain what you are doing. It should be undertaken only when the primary assessment has been completed and any issues resolved. **You need to record your findings and pass them on to ambulance crew during the handover.**

Secondary assessment procedure

The procedure for the **secondary assessment** is as follows:

- Always wear gloves. Systematically checking for blood / fluids on gloves as you progress through the secondary survey.
- Central nervous system: Talk to the casualty and assess their level of responsiveness.
- Starting at the casualty's head: Look and feel for any deformity and tenderness. Check for fluid leaking from ears and nose
- Neck: Look and feel for any deformity and tenderness. Consider Mechanism of Injury (MOI) for any neck or spinal injury
- Chest: Look and feel for any deformity and tenderness. Look for equal rise and fall of the chest, and for any obvious bruising.
- Back: Look and feel for any deformity and tenderness.
- Abdomen and pelvis: Look and feel for any deformity and tenderness.
- Extremities (arms and legs): Look and feel for any deformities. Check for strength by asking the casualty to squeeze your hands or push your hands with their feet.
- Checking and recording of any vital signs

Information gathering:

As part of the secondary assessment in medical related incidents, gathering information will involve questioning and the recording of vital signs. Good questioning enables you to gather information that may be useful for EMS staff.

Note: *This may be the last opportunity to obtain this information (if the casualty becomes unresponsive).*

Managing a responsive casualty:

- Undertake the primary assessment
- Call for assistance (make sure ambulance is in route)
- Position the casualty in the most comfortable position for them, or stable side position if unresponsive and breathing normally
- Undertake the secondary assessment – **PQRST** and **SAMPLE** questioning, record vital signs.
- Encourage/ assist the casualty to administer **their** medicines (if required).
- Rest and reassure

Questioning:

Types of questioning:

There are two key questioning methods: **OPQRST** and **SAMPLE**. It is good practice to write notes so that the information can be relayed to ambulance staff.

- O** Onset – when did it start
- P** Provoke or alleviates-does anything make the pain better or worse?
- Q** Quality-can you describe what the pain feels like e.g. dull, sharp, crushing or throbbing?
- R** Region/radiates-where is the pain? Does it go anywhere else?
- S** Severity-on a scale of 1-10, how would you rate the pain?
- T** Time-how long have you had the pain/injury?

- S** Signs and symptoms
- A** Allergies-are you allergic to anything?
- M** Medications-are you on any medication, when and how long ago did you take it?
- P** Past history- do you have any medical conditions, has this happened before?
- L** Last meal-when did you last eat or drink? Was toileting normal? (ins and outs)
- E** Events prior to incident. What happened, what were you doing?

Vital signs:

It is very important to have a clear understanding of the casualty's vital signs and to know what they mean, and what the possible consequence are to any change to these vital signs. First aiders should check and record:

- **Respirations** - how many times per minute the patient breathes, laboured or normal.
- **Pulse** - how many times the heart beats per minute, weak or strong, regular or irregular.
- **Temperature** -what is the temperature of the casualty?
- **Pupils** - the pupils can tell a lot about how the brain is functioning. Both pupils should be roughly equal in size and reactive to light.
- **Blood pressure** – take a blood pressure if you have the equipment and assess. Review further blood pressure recordings every 5 minutes and compare.
- **Circulation/Perfusion**- capillary refill time <2 seconds – colour

When a light is directed into the pupil, a normal functioning pupil should instantly constrict, and dilate again once the light is removed. Consider medical reasons for abnormal constriction and dilation or unequal pupil size.

A **normal** pupil in a fit and healthy person ranges from **3.0mm to 6.5mm**

Any abnormal change in pupil size can occur as a result of:

- Medications
- Drugs
- Toxins (poisons)
- Head trauma
- Stroke

Vital signs – Ranges:

	Respirations	Pulse	Temperature	Blood pressure
Adult	12-20 rpm	60-80 bpm	37C	120/80 mmhg
Child	20-30 rpm	60-100 bpm	37C	100/65 mmhg
Infant	30-40 rpm	100-160 bpm	37C	95/65 mmhg

Extended care in the outdoors - WRAPT

W	Warmth	Insulate the casualty, remove wet clothing, protect from the elements
R	Rest	This, along with concern / empathy can help the casualty cope and have a positive effect on vital signs
A	Assess again	Monitoring, recording and evaluating vital signs will help you to tell if the condition of the casualty is getting worse
P	Positioning	Lying flat? Semi-sitting? Legs raised? Stable side position?
T	Treatment	You can begin this when you know what the illness / injury is. Arranging evacuation will have to be considered

Always check to see if the casualty is carrying a **medical ID** or wearing **medical alert** jewellery e.g. www.medicalert.co.nz or if they are carrying medications on them

Mechanism of injury (MOI)

Casualty Assessment

The MOI is the sequence of events that results in a particular injury or injuries. At a more fundamental level, the MOI is the physical forces (acceleration, deceleration, impact, recoil, etc.).

PBEC providers can use the mechanism of injury to help determine how likely it is that a serious injury has occurred.

The PBEC procedure for the head-to-toe examination is as follows -

Head:

- **Scalp** - Feel for swellings, cuts and for depressions caused by a skull fracture. If the skull feels mobile as a result of skull fracture **do not apply any further pressure** in order to avoid worsening brain injury or bleeding.
- **Face** - Detect bleeding and swellings.
- **Pupils** - See whether they are the same size. Unequal pupils can mean significant brain injury; this is a serious sign requiring urgent hospital admission.
- **Mouth** - Look for bleeding, loose teeth, dentures, regurgitated material or vomit and burns. Smoke inhalation can be indicated by sooty deposits around the mouth and nose and within the air passages; this is a dangerous sign suggesting an airway burn and warranting urgent medical attention.
- **Ears** - Search for bleeding or other fluids leaking from the ear canal.
- **Breath** - Smell for unusual odours; this might include some poisons and alcohol.

- **Lips** - Look at the colour of the lips / tongue. A blue discolouration could mean low blood oxygen content (cyanosis). Soot suggests inhalational burn injury.
- Look for leakage of cerebrospinal fluid from orifices.

Neck:

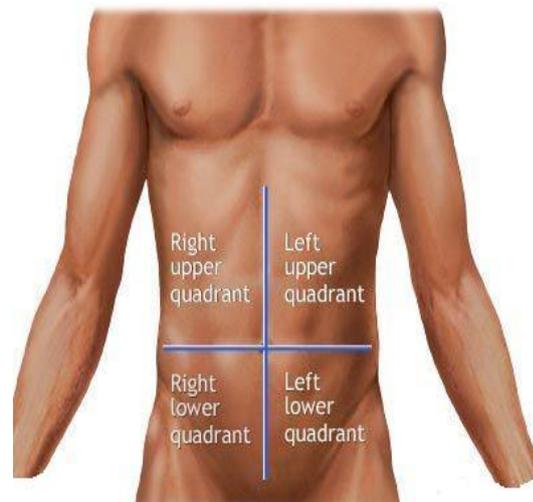
- Without moving the neck, feel very gently for any deformity of the spine at the back of the neck.
- Look for Medic Alert jewellery.
- Search for swelling and bruising.
- Feel to make sure the windpipe (larynx) is in the midline. If it is shifted to one side and the casualty is having difficulty breathing, this is serious and will require **urgent medical attention!**

Chest:

- From the front, compare and gently feel for deformity and pain, the shoulders, collarbones and ribs on each side. Pain, deformity and asymmetry could indicate fracture or dislocation.
- Determine whether each side of the chest moves the same amount with each breath. Asymmetry of breathing could indicate an underlying lung problem or serious rib fractures.
- Without moving the casualty, feel gently under the spine for any deformity. Do not persist if this is difficult.

Abdomen:

- Explaining what you are doing and try to get the casualty to relax. Gently press on the four quadrants of the abdomen, pressing with the flattened fingers about 3-5 centimetres: upper left and right, lower left and right.
- There should be **no pain** and the abdomen should be soft or firm, but not rigid and board-like.



Pelvis:

- With your hands on the uppermost and outer aspects of the pelvis, gently squeeze toward the midline. Watch the casualty's face for signs of pain. There should be no pain. If pain is observed a pelvic fracture could be present, do not squeeze any longer.
- With your hands on the front of the pelvic bones, gently push backward. Watch the casualty's face for signs of pain. There should be no pain. If pain is elicited a pelvic fracture could be present, do not push any longer.

Limbs:

- Ensure that there is movement and feeling in the fingers and toes.
- Unless there are obvious injuries to the hands and feet ask the casualty to "Squeeze my hand, wriggle your toes".
- Look at the wrists for a medic alert bracelet.
- If movement and feeling are present and there are no obvious lacerations, dislocations or fractures, you could check to ensure that movement is normal, comparing the casualty's range of movement with your own.

Managing a responsive casualty:

- Undertake the primary assessment.
- Call for assistance (make sure ambulance is in route).
- Position the casualty in the most comfortable position for them, or stable side position if unresponsive and breathing normally.
- Undertake the secondary assessment – **PQRST** and **SAMPLE** questioning.
- Encourage/ assist the casualty to administer **their** medicines (if required).
- Rest and reassure.

Questioning:

Types of questioning:

There are two key questioning methods: **PQRST** and **SAMPLE**. It is good practice to write notes so that the information can be relayed to ambulance staff.

Mass Casualty Incident (MCI)

Casualty Assessment

Identifying mass casualty is when the casualties overwhelm the responders.

The role of the first aider in a mass casualty is to do the greatest good for the most people.

MCI Triage is a system of prioritising patients

Triage is sorting the casualties by the severity of their injuries and recognising the urgency around medical issues that tell the responder the priority in getting the casualties to advanced medical care.

Triaging casualties using START into the below categories will help the responder activate the EMS and treat life-threatening issues systematically.

START system is used in many countries around the world.

S- Simple

T- Triage

A- and

R- rapid

T- treatment

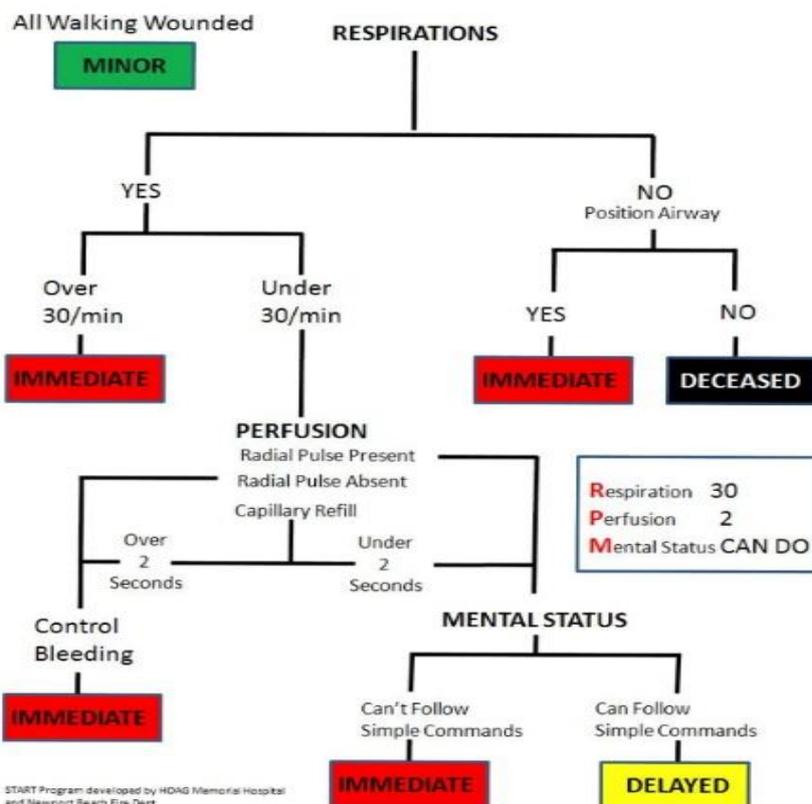
Basic modified START triage

If anyone that can walk usher them to an area of safety.

Any remaining casualties begin to triage, start with the patient nearest and work through.

START TRIAGE

(Simple Triage and Rapid Treatment)



The only interventions performed during initial triage are opening airways (side stable position) and stopping uncontrolled bleeding. If available, get bystanders to assist.

Status codes are a Hand over tool to EMS used by advanced first aiders.

- 0= Dead
- 1= CPR
- 2= Unstable
- 3= Stable but may become unstable
- 4= Stable

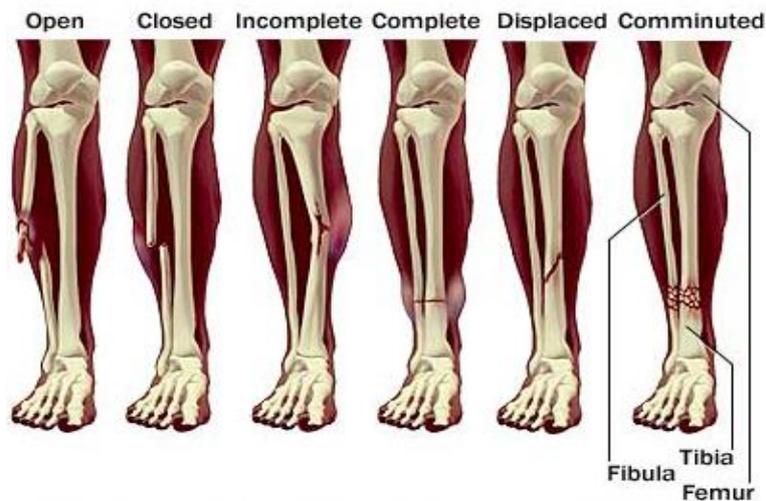
Fractures

Trauma Management

Overview:

Fractures in a pre-hospital environment rarely need splinting. The most important focus in fracture management is to effectively treat any associated external bleeding, negate as much as possible further injury and to make the patient as comfortable as possible with reduced pain. Significant blood loss can occur from fractures and bleeding can be internal.

Types of fractures:



Common Types of Fracture

Open fractures These are fractures that have punctured the skin. The bone end may have returned and not be visible, but this is still an open fracture.

Closed fractures These are fractures where the surrounding skin remains intact.

Complicated fractures These are fractures that have caused damage to internal structures, such as a punctured lung, or a fracture that involves significant bleeding.

Signs and symptoms

A casualty experiencing a fracture may experience one or more of the following signs and symptoms:

- Pain at the injury site
- Bleeding (internal or external)
- Open wounds with or without exposed bone ends
- Deformity
- Shortening or rotation of the limb
- Inability to move or stand
- The casualty reports hearing the bone break
- Tenderness
- Swelling or irregularity
- Shock like signs and symptoms
- Crepitus (the sound of bones grinding)
- Discolouration
- Shortening of the limb

Management

The steps for the management of fractures are:

- Carry out primary assessment, DRS ABCD
- Seek medical attention (make sure EMS are activated).
- Control any external bleeding using direct pressure. If a bone is exposed apply indirect pressure around the bone to stop bleeding.
- Carry out secondary assessment
- For a closed fracture, ice packs may be used to assist with pain relief and swelling.

- Minimise any unnecessary movement unless there are safety concerns.
- If the injured limb needs to be immobilised, make use of whatever you have got at hand to do so e.g. pillows, magazines, or dressings to support the limb.
- Check the circulation below the fracture site.
- Rest and reassure
- Monitor, take and vital signs

Soft Tissue Injury

Trauma Management

Overview

Ligaments and tendons are soft tissues that connect muscle and bones together. They can be damaged as a result of forceful joint movements and/or external pressure on the body. Sprains and strains can limit movement by causing pain and swelling at the injury location. More serious underlying injuries can be present, for example fractures or tendon ruptures.

Treatment - RICED:

ACC has specific guidelines on how to deal with sprains and strains. This is simplified with the acronym **RICED**.

- R Rest:** Stop the activity
- I Ice:** For up to 20 min (do not over cool)
- C Compression:** use a bandage to reduce localised swelling
- E Elevate** to support drainage
- D Diagnose:** Soft tissue injuries may be referred to a doctor in order to identify any potential fracture/s

Signs and symptoms:

A casualty experiencing a soft tissue injury may display one or more of the following signs and symptoms:

- Pain in the area of injury
- Lack of, or limited movement
- Inability to bear weight
- Swelling
- Tenderness
- Bruising

Management:

The steps for the management of soft tissue injuries are:

- Carry out primary assessment, DRS ABCD
- Seek medical attention.
- Remove constrictive clothing or jewellery.
- Apply the **RICED** technique.

Overview

Bleeding is one of the most rectifiable causes of death following trauma, therefore controlling external bleeding is a main priority when administering care in a pre-hospital environment.



There are three main types of blood vessel:

- Arteries
- Veins
- Capillaries

Types of bleeding:

Arterial bleeding from a severed/ruptured artery will be profuse and rapid because it is under pressure. It will be spurting as the heart beats, which will make it difficult to control and for clots to form. This bleeding will be bright red as arterial blood is comprised of highly oxygenated red blood cells. Arterial bleeding is a significant and life-threatening condition leading to hypovolemia.(low volume).

Venous bleeding is easier to control because the blood in the veins is under less pressure, which assists with clotting. Because it carries less oxygen, venous blood is a much darker red. Dangerous levels of blood loss can occur from venous bleeding if not controlled leading to hypovolemia.

Capillary bleeding from surface wounds is the most common and easiest to control, as capillaries are closest to the surface of the skin. Blood tends to ooze rather than flow or spurt as the pressure in the capillaries is very low.

Management:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS are enroute)
- Make sure there isn't a foreign body in the wound before applying direct pressure
- Apply direct pressure (dressing and bandage)
- Elevation provides minimal assistance but may be used if the wound position allows and does not cause the patient more injury or pain.

- If unresponsive and breathing is adequate, place the casualty in the recovery position
- Carry out secondary survey
- Severe bleeding may lead to unconsciousness and may require life support (CPR)
- Monitor and record vital signs
- Rest and reassure

Direct pressure:

Direct pressure is the primary treatment used to manage bleeding:

1. After checking for any foreign objects in the wound, apply firm pressure, directly onto and if required, into the wound using large sterile trauma dressings.
2. If blood soaks through the initial dressing, apply further dressings as required.



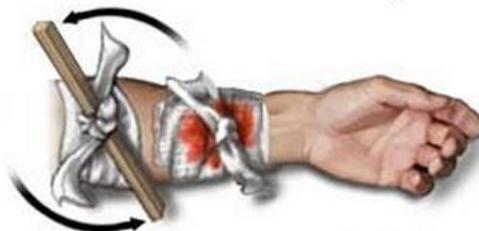
Application of direct pressure

Indirect Pressure

When a foreign object or bone protrudes from a wound, place packing around the object and pressure with bandages to control bleeding. Do not remove the object as it acts as a plug to stem bleeding.

Tourniquet:

For severe bleeding from a limb where direct pressure is ineffective, a tourniquet (or improvised tourniquet) can be used. Apply approximately 5cm above the wound (between the wound and the heart) ensuring the tourniquet tightness stops the bleeding. Do not tourniquet over a joint, once in place do not remove. Inform EMS of the tourniquet and time it was applied.



Overview:

Shock is a medical emergency in which the organs and tissues of the body are not receiving an adequate flow of blood. This deprives the organs and tissues of oxygen (carried in the blood) and allows the build-up of waste products. The most common cause of shock you may encounter is caused by severe blood loss (Hypovolaemic shock). Shock can easily lead to death if the cause is not treated urgently.

Five main types of shock:

- Cardiogenic shock (problems associated with the heart's functioning)
- Hypovolaemic shock (the total volume of blood available to circulate is low)
- Anaphylactic shock (caused by a severe allergic reaction)
- Septic shock (caused by overwhelming infection, usually by bacteria)
- Neurogenic shock (caused by damage to the nervous system from a spinal cord injury or neurological disorder).

Typical causes of shock include:

- Severe bleeding
- Major or multiple fractures
- Major trauma
- Severe burns or scalds
- Severe diarrhoea and vomiting
- Severe sweating and dehydration (heat stroke)
- Heart disorders
- Anaphylactic reaction
- Severe brain/spinal cord injury

Signs and symptoms of shock:

There are several indicators that a casualty is going into shock:

- The body's nonessential organs slow down
- Rapid weak pulse
- Pallid, cool, clammy, sweaty skin
- Nausea or vomiting
- Rapid breathing
- Altered level of responsiveness

Shock management:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- Minimise any movement to casualty
- If bleeding is present attempt to manage by applying direct pressure.
- Where possible have the patient lying down with their legs and feet raised (shock position) if unresponsive and breathing, place in the recovery position
- Keep the casualty warm but do not overheat
- Undertake a secondary assessment.
- Monitor and record vital signs regularly
- Rest and reassure.

Concussion

This is a temporary loss or altered level of consciousness occurring after a head injury or impact to the skull area. Casualties who subsequently show a continuing decline in consciousness may be suffering from a more serious brain injury, requiring urgent medical attention.

Mild concussion may involve no loss of consciousness (feeling "dazed") or a very brief loss of consciousness (being "knocked out").

Severe concussion may involve prolonged loss of consciousness with a delayed return to normality.

Causes:

Concussion can be caused by any significant blunt force trauma or jolt to the head e.g. falls, car accidents, or being struck on the head with an object

The signs and symptoms of concussion are:

- Loss of consciousness after any trauma to the head
- Temporary/continued/delayed confusion
- Dazed demeanour and repeated "same questioning"
- Nausea
- Inability to recall the incident
- Blurred vision

Management:

- Carry out primary assessment, DRSABCD
- Carry out a secondary assessment, taking into consideration any neck or spinal injury
- Monitor and record vital signs
- Seek medical attention if casualty's condition is prolonged/deteriorates
- If unresponsive and breathing, place the casualty in a stable side position
- Should you move the casualty, immobilise the casualty by supporting the head and neck with both hands. This will minimise head, neck and spinal movement.
- Rest and reassure

A head injury is damage to living brain tissue caused by an external mechanical force. It is usually characterised by a period of unconsciousness lasting minutes, months or indefinitely. The resulting damage to the brain tissue impairs the individual's abilities both physically and mentally. Other causes of head injuries are chemical exposure and alcohol related damage.

There are some groups in the community who are more susceptible to head injury than others:

- Young male adults aged 17-25 make up 50% of known head injury victims, usually as the result of car accidents.
- Pre-schoolers are the next most vulnerable with falls from play equipment, windows and falls downstairs.
- The elderly are also vulnerable to head injury mainly from falls in the home.

Causes:

About 170 New Zealanders are hospitalised with head injuries every week and many more are concussed or have mild head injuries. These can be caused by:

- Motor vehicle accidents
- Assaults through blunt force trauma
- Sporting accidents
- Accidents at home
- Industrial accident
- Exposure to solvents
- Exposure/result of drugs and alcohol

Signs and symptoms of head injuries are:

- Skull deformity
- Obvious signs of a head wound
- Bleeding or straw-coloured fluid discharge from ears, nose or mouth.
- Slurred speech
- Bruising around the edges of the eyes (raccoon eyes) and behind the ears
- Unconsciousness, drowsiness, or vagueness
- Loss of memory
- Agitation or irritability
- Lack of coordination
- Bleeding into the eyes
- Changes in size or shape of pupils
- Seizures.

Management:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS are activated).
- If unresponsive and breathing, place the casualty in a stable side position
- Should you move the unconscious casualty, immobilise the casualty by supporting the head and neck with both hands. This will minimise head, neck and spinal movement.
- Control any external bleeding.
- If the casualty is bleeding from the ear, carefully position them with the bleeding ear down. However, if you find the casualty is bleeding from both ears, cover the ears with a sterile pad.
- Undertake a secondary assessment.
- Monitor and record vital signs
- Rest and reassure the casualty.

Overview:

Spinal injuries are caused by traumatic forces on the body. The spine is a set of vertebrae held together by a series of ligaments. The spinal cord passes through the centre of the vertebrae, and its nerves transmit the signals to and from the brain that control muscle movement such as breathing, and monitor sensation such as temperature. The majority of spinal injuries involve the ligaments in the spine; this will cause pain but will not generally cause serious disability. More serious spinal injuries occur when the vertebrae shift, causing damage to the spinal cord. This can result in paralysis and, in severe cases, can cause death.

Some common causes of spinal injuries include:

- Motor vehicle crashes
- Diving accidents
- Head injuries
- Falls when the casualty lands on their feet or head
- Assaults
- Industrial accidents

Signs and symptoms:

A casualty experiencing a spinal injury may display one or more of the following signs and symptoms:

- Pain in the injured area
- Numbness and tingling
- Loss of feeling or weakness in parts of the body
- Loss of movement
- Priapism in males (unwanted, uncontrolled erection)
- Loss of bladder control.
- Altered level of consciousness
- Swelling or bruising over the injured area
- Evidence of a wound

Consider the Mechanism of Injury (MOI) if:

- There's evidence of a head injury with an ongoing change in the person's level of consciousness
- The person complains of severe pain in his or her neck or back
- The person won't move his or her neck
- An injury has exerted substantial force on the back or head
- The person complains of weakness, numbness or paralysis or lacks control of his or her limbs, bladder or bowels
- The neck or back is twisted or positioned unnaturally

Management:

If you suspect someone has a spinal injury:

- Keep the person still. Support head and neck to prevent movement. The goal of first aid for a suspected spinal injury is to keep the person in the same position as he or she was found
- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- If unresponsive and breathing, consider placing the casualty in the side stable position (see movement section below)
- Undertake a secondary assessment.
- Monitor and record vital signs
- Rest and reassure

Movement of a casualty with suspected spinal injuries:

If you must move the person i.e., they are vomiting, choking on blood or in danger, the more rescuers used, the less the possibility of further spinal damage. Work together to keep the person's head, neck and back aligned while rolling the person onto one side or removing from a danger. If alone, roll the patient into the stable side position with as little movement as possible to the spinal column, if moving from danger, grab the clothing around the shoulders while supporting the head in the cradle of your arms and drag the patient along their axis to safety.

Spinal Immobilisation

Section 7: Skeletal Injury / Extrication

Spinal Board:

A spinal board, also known as a long spine board (LSB), long board, spine board, or back board, is a casualty handling device used primarily in pre-hospital trauma care and is designed to provide rigid support during movement of a patient with suspected spinal or limb injuries.

Spinal boards are almost always used in conjunction with the following devices:

- A **cervical collar** with occipital padding as needed (must be fitted correctly).
- **Side head support**, such as a rolled blanket/towel or head blocks made specifically for this purpose, used to avoid the lateral rotation of the head.
- **Straps** to secure the patient to the long spine board or scoop stretcher.

Extraction Devices

Section 7: Skeletal Injury / Extrication

Litter:

A 'litter' is a stretcher or basket designed to be used where there are obstacles to movement or other hazards: for example, in confined spaces, on slopes, in wooded terrain. Typically, it is shaped to accommodate an adult in a face up position and it is usually used in search and rescue operations. The person is strapped into the basket, making safe evacuation possible. **The casualty is usually further protected by a spine board and side head support**, so as to immobilise the person and prevent further injury.



Litter Stretcher:

A litter essentially is a **stretcher with sides** (or just a raised edge) and a removable head/torso cover. One widely used style of litter is the **Stokes basket**.

Stokes Basket / Stretcher:

A Stokes basket, also called a Stokes stretcher or Stokes litter, is a metal wire or plastic litter widely used in search and rescue. Its key feature is that it can be disassembled for transport.



Kendrick Extrication Device (KED):

The Kendrick Extrication Device (KED) is a device that is used in vehicle to remove victims of traffic collisions from motor vehicles. Commonly carried on ambulances, the KED is typically applied by an emergency medical technician, paramedic, or another first responder. Typically used in conjunction with a cervical collar, the KED is a semi-rigid brace that secures the head, neck and torso in an anatomically neutral position. This position reduces the possibility of additional injuries to these regions during extrication.

Kendrick Traction Device (KTD)

Section 7: Skeletal Injury / Extrication

The Kendrick Splint is a lightweight piece of equipment used widely in pre-hospital care and is easy to use, effective and relatively cheap.

Indications:

Fractured Femurs form only a small percentage of common injuries but can be associated with significant morbidity and mortality. Early effective management is vital in view of the risk of significant blood loss, pain, long term complications and compartment syndrome. In assessing and managing

femur injuries, it is also very important to exclude associated injuries such as chest, axial skeleton, pelvis and head.

The injured leg needs to be put under traction. Whilst equipment is being assembled, the leg can be held in traction by any member of the team. The foot and ankle can be held, and the leg pulled out to anatomical alignment and held in position. This is immensely painful for the patient, and thus adequate analgesia is essential. Once the leg is under traction, pain is often reduced.

Management:

It is vitally important to ensure there are no other traumatic injuries.

The ultimate aim of management of a femur fracture is to return the limb to its normal anatomical position. This not only helps reduce pain by bringing the bony fragments into alignment and reducing muscle spasm and soft tissue involvement, it also reduces bleeding, improves clot preservation and helps improve distal perfusion.

Continuous traction is needed on the limb to help bring the proximal and distal ends of the fracture back into alignment, reduce bleeding and pain.

Vacuum splints (and mattresses) are simple, safe and effective methods of emergency splinting of fractured extremities (and fractures to the spine). The splints are simply constructed from vinyl sheeting and contain 2mm expanded polystyrene balls.

The inflation of air by a pump causes the splint to become rigid thereby providing stability and immobilisation of the limb. At the same time the surface of the splint becomes slightly irregular. This allows the air to circulate beneath it and prevents the skin from becoming soggy and macerated.

Advantages of the vacuum splint:

- It is easily applied to the fractured extremity with minimal discomfort to the patient.
- It provides stable and comfortable support to the fracture site with minimal compression.
- The inner surface texture of the splint allows full air circulation and prevents the skin from macerating because of accumulated perspiration.
- The splint is light and completely radiolucent and therefore the patient can be readily transported to the x-ray department for radiographs of the affected area.

Indications:

- Knee dislocations.
- Patella fractures.
- Tibia and/or fibula fractures.
- Ankle and/or foot dislocations.
- Ankle and/or foot fractures.
- Humerus fractures.
- Elbow dislocations.
- Elbow fractures.
- Ulna and/or radius fractures.
- Wrist or hand dislocations.

- Wrist or hand fractures.

Box splint

This is the most common way to splint to restrict movement.

Cardboard box splints are purpose cut and can be folded and cut to shape to fit around joints. It is then secured in place with bandages/tape/triangle bandage.

Applying a box splint

- Expose and assess the affected limb checking baselines (Warmth, sensation, colour, movement, capillary refill).
- Pad the box splint with towels add more padding/support as needed.
- Fold the splint around the limb.
- Secure with bandages, tape, triangular bandages.
- **Do not tie over wound or joints.**
- Reassess the limb.

Mouldable Splints

Foam backed pliable splint (normally made of aluminium)

These can be moulded to fit and support injured limb.

Manual handling

Manual handling is a task or activity that requires a person to use any part of their muscular or skeletal system to lift or lower, push or pull, carry or move an object.

Warming up is an important part of any physical activity.

Stretching out and warming up the body is important to reduce or prevent injury.

Tips for manual handling

Plan before lifting or handling

Adopt a stable position

Keep loads close to your body get a good hold

Good communication to other and the patient as what is required

Avoid twisting while moving and move smoothly.

Basic extraction techniques:

Blanket lift – used for short/medium distance

Multiple helpers to lift needed for this extraction technique.

Patient is positioned in the centre of blanket.

Make a tight roll to both sides of the blanket each side of patient.

Blanket is now rigid enough to act as a soft stretcher.

The person at the head, coordinates the team with all instruction overseeing the lift.

Human Chair lift – used for short distance

You will need a minimum of 2 helpers.

The helpers' cross arms and hold hands to form a chair

The patient sits on the arms of the helpers and place their arms around the shoulders of the helpers.

This technique is best used over short distance and ideal for injuries to lower limbs where weight bearing is causing discomfort/pain.

Lifting belt (often call a transfer belt)

This is used to reposition a patient from sitting to standing and floor to feet. It can also be used to support while walking with patient. It is a purpose made belt with hand holds to help support while lifting/assisting movement. Can be used with one or two first aiders helping to lift or assist.

Two-person technique- hold the belt on the handles each facing the side of the patient, get the patient to fold arms and push off from the ground to help with the upward motion, First aiders to bend from the knees to avoid back strain.

Walking with the patient- hold the belt at waist level and the patient arm to aid with support for walking short distances. Mirror patients steps so not to push patient and cause overbalance.



Example of a Lifting Belt (transfer belt).

Slide sheets

This technique can be used to move patient into a more accessible position.

Make sure that the surface underneath the patient is stable; breaks are on the bed and any gaps filled if transferring form one surface to another. Make sure patient has crossed their arms, head is on the sheet and where possible bring patients knees up and place feet on the sheet as well.

Scoop stretcher

Used to extract a patient from the scene with minimum movement.

The scoop can be lengthened or shortened to fit with the height of the patient.

Split the scoop at top and bottom brackets, place alongside of patient and adjust to size do the same to the other size. Lock the scoop at the head end first, pull the bottom ends together making sure not to catch the patient as you do this. You may have to log roll the patient slightly to achieve the bottom bracket locking in place. Use straps to secure patient to the scoop. Use head blocks or rolled up towels to secure head movement if suspicion of spinal injury.



Sucking Chest Wound

Trauma Management

A 'sucking chest wound' occurs when the chest wall is punctured by a penetrating object.

Air is then sucked into the chest cavity (Pneumothorax), which may cause the lung to collapse. If air continues to enter the chest space faster than it can escape, then the rising pressure can force the collapsed lung to press on the heart and other lung (Tension Pneumothorax)

Treating a sucking chest wound requires two objectives:

- Keeping air from going in at the wound site
- Letting extra air out of the chest cavity.

It can be difficult to identify when a penetrating wound to the chest is sucking air or not, so it's best to assume any penetrating wound to the chest is a sucking chest wound.

Note: a sucking chest wound is a life-threatening critical incident and requires immediate medical attention.



Signs and symptoms:

- Obvious chest
- Pink frothy blood
- Difficulty breathing
- Unequal chest (one side looks different to the other)
- Veins on the neck bulging (jugular vein distension)
- Blue lips, neck or fingers (cyanosis)
- No lung sounds on one side
- Severe shortness of breath

Management:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS are activated).
- Cover the sucking chest wound with a hand-held dressing. Apply direct pressure -stop the external bleeding. This is the most important action you can do to save the life of the injured person.

Note: *If you note the casualty's condition is rapidly deteriorating, momentarily remove the hand-held dressing to let any trapped air escape from the wound. Replace the dressing immediately once the air is released from the chest. Repeat as necessary.*

*The casualty has a **Tension Pneumothorax** where air is escaping from the punctured lung into the chest but not allowed to externally release, is trapped by your applied dressing and is pressurising the opposite good lung. A difficult situation as the bleeding and the Tension Pneumothorax is life threatening. Manage both conditions by the above method.*

- Position the patient in the stable side/recovery position with the injured side towards the ground so that internal bleeding has less effect on the opposite lung.
- Carry out secondary assessment
- Do not give the casualty anything to eat or drink, including water
- Keep casualty warm
- Monitor and record vital signs
- Rest and reassure
- If an object is embedded, leave the penetrating object in the chest, do not remove it. Removing the object can cause further damage to the chest or lung. Try and place roller bandages to support the object and control external bleeding.

Burns

Trauma Management

Burns to the following areas (and sizes) **must always be seen by a medical professional:**

- | | |
|-----------------------------|---|
| <input type="radio"/> Head | <input type="radio"/> Neck |
| <input type="radio"/> Eyes | <input type="radio"/> Hands |
| <input type="radio"/> Feet | <input type="radio"/> Joints |
| <input type="radio"/> Groin | <input type="radio"/> Burns exceeding the size of the casualty's palm |



Burns to children **under 5** and the **elderly** must be seen by a medical professional.

Recognition:

- | | |
|--|---|
| <input type="radio"/> Severe pain (if 'superficial') | <input type="radio"/> Hot to the touch |
| <input type="radio"/> Redness | <input type="radio"/> Peeling, blistering |
| <input type="radio"/> Watery fluid seeping from area | <input type="radio"/> Swelling |
| <input type="radio"/> Signs / symptoms of shock | |

Management (The 3 C's):	
COOL:	Use tepid, flowing water for at least 20 minutes . Chemical burns up to an hour .

CLEAR:	Remove anything that may keep burning (that isn't sticking). Remove jewellery. Remove clothing that is contaminated by chemicals.
COVER:	Preferably with a non-adherent dressing . Cling-film is ideal (if available).

How to identify and assess burns:		
S	SIZE	Size of area burnt: Patient's Palm = 1% of body surface area
C	CAUSE	1 of 4 causes: Thermal, Chemical, Electrical, Radiation(most common is Sunburn)
A	AGE	Age of the patient: (Very young and very old always serious)
L	LOCATION	Where is the burn? Critical areas: Face, Hands, Feet, Genital
D	DEPTH	Burn depth: Superficial, Partial Thickness, Full Thickness

Management Of Medical Emergencies

What this section contains:

This section will equip you with the knowledge and skills to assist in providing First Aid care to patients with specific medical conditions. The following medical conditions are frequently seen in a pre-hospital setting:

- Diabetes
- Heart attack
- Angina
- Stroke
- Seizure
- Asthma.
- Severe allergic reactions (anaphylaxis)

Why you need to know this:

These are the most common conditions that First Responders may encounter; therefore, it is very important that you have a good knowledge of how to deal with them. One of the roles of the first Responder is to prevent the deterioration of the patient's condition as much as possible, while waiting for more advanced medical assistance.

Overview:

Diabetes is a disease which causes the body to insufficiently use glucose (sugar). Insulin is a hormone that the pancreas produces to move glucose around the body. In diabetes, the pancreas does not make enough, or cannot properly use insulin. This condition can lead to the body having too little sugar (hypoglycaemia) or too much sugar (Hyperglycaemia) in the blood.

A diabetic casualty might have special blood sugar monitoring equipment. Some diabetic patients can regulate their condition through diet alone, while others take regular medication or get insulin injections. In an emergency, it can be difficult for the first aider to diagnose whether a diabetic has too much or too little blood sugar.

Too little sugar is life threatening and patients respond almost immediately when you give sugar or a sugary food (or drink) to a responsive patient. Too much sugar tends to build up slowly and does not normally present as an emergency. Giving sugar to a patient with too much sugar does not alter their condition dramatically, whereas giving sugar to a patient with low sugar levels can be a life-saving treatment.

Therefore, you should **give sugar** in all responsive patients having a diabetic emergency.

There are two types of diabetes:

- **Type 1** - This usually develops in childhood. Sufferers require daily insulin injections because their bodies produce little or no insulin.
- **Type 2** - This usually develops in adulthood. Sufferers typically still secrete some insulin; however, this is insufficient. This type is controlled by diet, exercise and/or oral medication, although some severe sufferers may require insulin injections daily.

Both type 1 and type 2 diabetic patients can experience an imbalance in the concentrations of sugar and insulin in their blood, resulting in either:

- Hypoglycaemia - too little sugar in the blood
- Hyperglycaemia - too much sugar in the blood

Both conditions can cause altered states of consciousness and represent potentially serious medical emergencies.

Signs, symptoms, indicators:

The following are indicators, signs and symptoms of a diabetic event:

- Aggressive demeanour (sometimes can be mistaken for drunkenness)
- Breath smells like acetone, or nail polish remover
- Unconsciousness
- Thirst
- History of diabetes, a Medic Alert bracelet
- Missing a meal
- Missing medication
- Confusion, inability to concentrate, or difficulty speaking
- Dizziness
- Racing heart or irregular heart rhythm
- Sweating or clamminess
- Muscle tremors

Management

- Carry out primary assessment, DRSABCD

- Seek medical attention (make sure EMS is activated).
- If the patient is conscious, give them fluid or food containing sugar, such as lollies, sugar enriched soft drinks, fruit juice or water containing several teaspoons of sugar.
- If the patient is unconscious, do not give anything by mouth, follow DRS ABCD and place in recovery position if breathing
- Carry out a secondary assessment
- Gain the patients history through **SAMPLE** questioning.
- Monitor and record vital signs
- Rest and reassure.

Note:

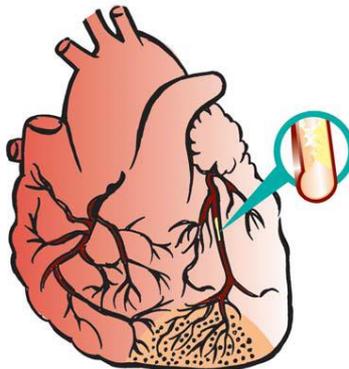
Whilst the management plan is the same for both conditions, only hypoglycaemic casualties will respond to sugar.

Heart Attack

Medical Emergencies

Overview:

The heart is a muscle that pumps blood around the body. It receives its blood through coronary arteries. From the age of about 20 years, these arteries start to become damaged through a process called **atherosclerosis**. Atherosclerosis causes fatty deposits or plaque to form on the walls of arteries.



After time, the surface of the fatty deposits or plaque begins to erode, and the blood starts to clot over the eroded surface. This clot can **completely block the artery**. Due to the blockage of the artery, a portion of the cardiac muscle stops getting oxygen from the blood. This part of the cardiac muscle will die unless oxygen delivery is restored quickly. This condition is called 'myocardial infarction' or **heart attack**.

Heart attacks can occur suddenly, without warning or exertion. When a coronary artery is blocked, the area of muscle below the blockage can die. This can be prevented with appropriate medical intervention and drugs. As only advanced medical professionals can administer these drugs, the key to survival is calling an ambulance or seeking medical attention quickly. In New Zealand, heart attacks are the leading cause of sudden death.

Signs and symptoms:

A patient experiencing a heart attack may display one or more of the following signs and symptoms:

- Sweating

- Pain or discomfort in the chest, arms, jaw, neck, or teeth; normally described as squeezing, tightness, or a crushing pain.
- Pallor or the skin
- Nausea
- Shortness of breath
- Sense of impending doom.

Management;

When a heart attack occurs, the steps for management are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- Have the patient **stop** all physical activity, and any unnecessary movement.
- Place them in a comfortable position if conscious, normally the sitting position or semi sitting position as it is easier to breath
- If the patient has their medication, assist them in following their cardiac plan
- Assist patient to take aspirin, 1 x 300mg tablet unless they have a known allergy to aspirin.
- Carry out secondary assessment
- Gain the patients history through **SAMPLE** questioning.
- Rest and reassure
- Monitor and record vital signs
- If unresponsive and breathing, place the casualty in a stable side position
- If the person becomes unresponsive and not breathing normally, follow DRSABCD algorithm.

Medication:

If a casualty experiences chest pain, ascertain if they are carrying their prescribed medication e.g. **Nitro-lingual spray or aspirin**, suggest that the casualty take their medication, or assist them to self- administer it.

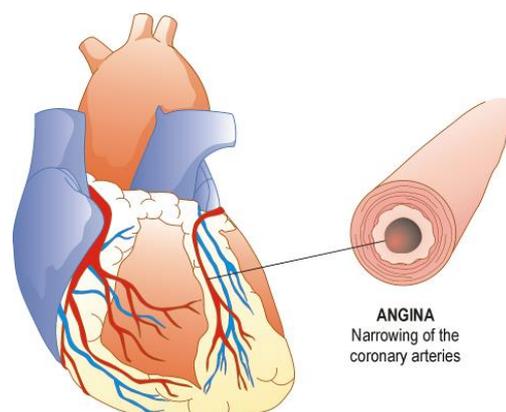
Angina

Medical Emergencies

Overview

People usually get angina because they have coronary artery disease. A coronary artery is a blood vessel circulating blood around the heart. In coronary artery disease, clumps of fat build up on the lining inside the arteries. Over time, the arteries narrow resulting in poor blood flow through the blood vessels of the heart muscle (**partial blockage of the artery**).

During exercise, physical activity or stress, the heart muscle does not get enough oxygen rich blood to meet the demands and effectively pump properly resulting in chest pain.



There are two main types of Angina:

- **Stable**
- **Unstable**

Stable Angina is chest pain or discomfort that typically occurs with some type of physical activity or stress. Angina symptoms should improve or go away completely when the person stops or slow down the activity or becomes more relaxed. The pain of stable Angina usually begins slowly and gets worse over the next following minutes. Stable Angina normally improves with the use of medication and /or rest/relaxation.

Unstable Angina is the most dangerous. It does not follow a pattern and can happen without activity or stress. It does not go away with rest. It is a sign that the patient could have a heart attack soon. Unstable Angina does not improve with the use of medication.

Normally people who suffer from Angina are aware of their condition and carry medication to assist with alleviating symptoms.

Signs and Symptoms:

The patient may experience:

- Pressure or a squeezing pain in your chest, lasting more than 10 minutes
- Pain radiating to the shoulders, arms, neck, jaw or back
- Shortness of breath
- Increased pulse rate
- Increased breathing rate
- Nausea or vomiting
- Shock like symptoms (pale, cold and sweaty skin)
- Sudden collapse

Management:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- If unresponsive and breathing, place the patient in a stable side position
- Have the patient stop all physical activity, and any unnecessary movement
- Place them in a comfortable position if conscious, normally the semi/sitting position as it is easier to breath
- If the patient has their medication, assist them in following their cardiac action plan
- Loosen any tight clothing
- If the patient becomes unconscious, prepare for potential cardiac arrest - follow DRS ABCD.
- Carry out secondary assessment
- Gain the patients history through **SAMPLE** questioning.
- Monitor and record vital signs
- Rest and reassure

Medication:

If a patient experiences chest pain, ascertain if they are carrying their prescribed medication (**Nitrolingual spray**), suggest that the patient take their medication, or assist them to self-administer it.



Nitrolingual Spray

Note

It is important to understand that Angina could be the lead into a heart attack, and that the signs and symptoms are similar. All instances of angina should therefore be suspected as and treated as per a heart attack.

Stroke

Medical Emergencies

Overview

A stroke is the loss of brain function that occurs due to a disruption in the blood vessels supplying blood to the brain. There are two primary causes which can occur:

1. A clot blocks an artery supplying blood to the brain.
2. An artery in the brain ruptures.

Strokes are a common cause of sudden death in New Zealand. A stroke can lead to extensive damage to the brain that may result in paralysis. The key to surviving a stroke is urgent hospital treatment. Our focus in the pre-hospital setting is to get the casualty to hospital as soon as possible. The airway and breathing should be monitored and managed as required until EMS arrival.

Signs and symptoms:

- Sudden weakness and/or numbness of the face, the arms, or the legs, especially on one side of the body
- Difficulty in understanding speech or speaking
- Loss of vision
- Confusion
- Loss of movement control or balance
- Severe headache
- Loss of bladder control
- Unresponsiveness

Apply the **F.A.S.T.** diagnostic tool:

- **F - Face** - does the face look uneven
- **A - Arm** - does one arm drift down when held out in front
- **S - Speech** - does their speech sound different
- **T - Take action** - **Call for an ambulance immediately** if you suspect someone has had a Stroke. Time is critical in treating the casualty with advanced care and drugs.

Management of stroke casualties:

The steps for the management of a **responsive** stroke patient are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- Move the patient to a comfortable position.
- Loosen any tight clothing.
- Reassure the patient.
- Monitor and record vital signs
- Gain the patients history through **SAMPLE** questioning.

The steps for the management of an **unresponsive** stroke patient are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- If unresponsive and breathing is adequate, place the casualty in a stable side position
- Loosen any tight clothing
- Undertake the secondary assessment
- Be prepared for the deterioration of the patient's condition, follow DRSABCD

Note:

Do not allow the use of any type of aspirin, as this may have detrimental effects on the casualty if they are bleeding in the brain as a consequence of a Stroke.

Seizures

Medical Emergencies

Overview:

Seizures occur when parts of the brain are affected by sudden, uncontrolled electrical activity. They are usually short-lasting and can appear in different ways. The most common is when the entire body of the casualty has uncontrolled jerking movements in the head, arms, and legs. Most people who suffer from seizures take medication on a daily basis to control the condition.

Seizures are normally brief (less than 10 minutes) and will result in little injury to the casualty. A seizure that is prolonged or recurring is a serious medical emergency and, if untreated, can result in death.

A seizure may occur:

- In a person with epilepsy
- As a result of almost any condition affecting the brain, such as head injury, stroke, meningitis, brain tumour.
- In association with some poisons and drugs
- During withdrawal from alcohol or other drugs of dependence
- In young children, normally, as a result of a high temperature. This is called a febrile convulsion.

Signs and symptoms:

A patient experiencing a seizure may display one or more of the following signs and symptoms:

- **Aura**, which is an unusual sensation preceding a seizure
- The casualty may go quiet with a distant stare
- Loss of bladder control
- Jerking movements of the head, arms, and legs or localized jerking of just one limb

- Unusual breathing sounds
- Clenched jaw
- Unconsciousness
- The casualty may be wearing a Medic Alert bracelet

Management:

The steps for the management of seizures are:

- Seek medical attention (make sure EMS is activated).
- Passively protect the patient from injury, for example, move furniture away.
- Use SAMPLE questioning to obtain the patient's history from family and/or bystanders.
- When the seizure stops, carry out primary survey DRSABCD.
- If unresponsive and breathing is adequate, place the patient in a stable side position
- Carry out secondary assessment and deal with any injuries
- Protect the dignity of the patient by shielding from onlookers
- Reassure them as they may be confused once the seizure stops.

Cardiac arrest:

Seizures are occasionally seen at the start of a cardiac arrest. It is important to undertake a proper primary assessment and, if breathing is absent, begin CPR immediately.

Note: *If Epilepsy is known, manage the seizure and evaluate the need to activate EMS. Epileptics have contingency plans should they have a seizure which can be activated once the seizure has stopped. If in doubt, the seizure is prolonged, or recurring, immediately activate EMS.*

Febrile convulsions

High body temperatures in infants and children (usually greater than 38°C) which is usually caused by infections can cause seizures. The body raises its temperature to assist with creating a fever, combating infection, but this can result in seizure if their temperature becomes too high. Seizures in infants and children should be treated as serious and must be seen by a doctor.

Management of febrile convulsions caused by fever:

- Seek medical attention
- Lower the casualty's temperature by removing the child's/infant's clothing
- Reduce temperature with a cool, wet flannel (beware of over cooling)
- Cool by fanning where possible

Note

- Protect the casualty from injury by moving furniture or sharp objects that may inflict harm.
- Do not restrain the casualty or try to stop the seizure. Allow the seizure to run its course.
- Do not put your fingers or any other objects in the casualty's mouth

Overview:

Asthma is a disease that affects the lower airways and can be fatal if severe episodes occur.

An Asthma attack can be divided into **three** categories of severity.

- Mild asthma
- Moderate asthma
- Severe or Life-threatening asthma

The key to survival is identifying that an asthmatic patient needs attention and get medical help as soon as possible.

Common 'triggers' of asthma attack:

- Upper respiratory tract infection
- Dust mites' faeces
- Pollen & moulds
- Changes in air temperature
- Exercise
- Stress
- Animal dander (skin flakes / feathers)
- Certain foods and preservatives.



Ventolin Inhaler

Signs and symptoms:

A patient experiencing an asthma attack may display one or more of the following signs and symptoms:

- Shortness of breath
- Cyanosis (blue tinge to the skin)
- Wheezing or other noises during breathing
- Difficulty in speaking
- Difficulty breathing
- Sitting upright, using their arms to brace their body
- Anxiety and distress.

Management:

The steps for the management of asthma patients are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- Position the casualty sitting upright, loosen any tight clothing around waist and neck.
- If the casualty has their medication, assist them in following their asthma plan.
- Reassure casualty
- Carry out secondary assessment.
- Consider questioning the patient or relatives using SAMPLE
- Monitor and record vital signs
- If patient becomes unresponsive and stops breathing, follow DRSABCD

Medication:

The majority of asthmatic patients usually carry medication to prevent and relieve symptoms. They usually follow an **action plan** when an asthmatic event occurs, which outlines the frequency and the amount of each drug used.

Overview

Hyperventilation is rapid or deep breathing that can occur with anxiety or panic. It is also called 'over breathing' and may lead to breathlessness. Excessive breathing leads to **low** levels of carbon dioxide in the blood. This causes many of the symptoms experienced during hyperventilation.

Signs and symptoms:

- Light-headedness
- Shortness of breath
- Numbness and tingling in the arms
- Muscle tremors
- Rapid breathing
- Anxious demeanour
- Rapid pulse

Common Causes:

- Panic attack
- Stress and anxiety
- Anxiety as a result domestic conflict
- Stimulant use (alcohol)
- Drug overdose

Management:

It is important to note that any patient suffering from hyperventilation must **increase their carbon dioxide** levels in their bloodstream; you need to assist them to return their breathing back to normal by:

- Sit the patient down and instruct them to breathe less deeply, more slowly and try to relax and concentrate on their breathing. If possible, get reassurance from a friend or family member to help relax their anxiety and therefore breathing.
- Tell the patient to breathe through their nose, this decreases the amount of air which is exhaled and re-inhaled.
- Tell the patient to slow their breathing down to 1 breath every 5 seconds, or slow enough that symptoms gradually reduce.
- Try and have patient mirror your breathing.

Note

If hyperventilation is not relieved, activate EMS

Overview:

Anaphylaxis is a severe allergic response caused by an 'allergen' to which the individual has previously been exposed to. The immune system misidentifies the allergen as dangerous and produces a severe histamine release. **This causing a sharp drop in blood pressure**, hives and breathing difficulties. The reaction can be fatal if emergency treatment, including adrenaline injections, is not given immediately.

Typical causes are:

- Peanuts
- Dairy products
- Wheat
- Soybean
- Fish and shellfish
- Bee stings
- Animal fur
- Some medications (penicillin)
- Latex rubber

Signs and symptoms:

- Itching or tingling in or around the mouth and throat
- Swelling of the lips, face, eyes and throat area
- Shortness of breath
- Wheezing
- Tightening of the chest
- Hives or redness
- Abnormal pain or vomiting
- Loss of consciousness and collapse

Management

- Carry out primary assessment, DRSABCD
- Immediately activate EMS – call 111.
- Position the conscious patient in a sitting position to help with breathing, loosen clothing around neck and waist.
- If unresponsive and breathing, place the patient in a stable side position
- Assist patient to administer their prescribed medication.
- Question the patient using SAMPLE
- Monitor and record vital signs.
- Be prepared for the deterioration of the patient condition, apply DRSABCD.

Medication:

People with a diagnosed allergy (that may result in anaphylaxis), should have an emergency action plan developed by their doctor. These people often carry prescribed medication with them e.g., EpiPen. The “adrenaline pen” is easy to use, injects into the outer thigh and is critical in the management of life-threatening anaphylaxis. Suggest that the casualty take their medication or assist them to self-administer it.

Oxygen (O²) therapy

Medical Emergencies

Oxygen makes up 21% of the air we breathe. Air that we breathe out (expired) contains 16/17% - the difference = 4%. Lack of oxygen is one of the leading causes of cell death!

Oxygen therapy should be considered if the patients **airway**, **breathing** or **circulation** is compromised.

Portable oxygen cylinders:

- **Colour:** White
- **Pressure** (when full): 154 times atmospheric pressure (2200lbs per square inch).
- **Pressure reducing device:** Reduces pressure to x4 atmospheric pressure, then the gas is passed through a flow meter.
- **Flow meter:** Accurately controls the flow rate to be delivered to the administration device e.g. mask.

Small Cylinder (Size B):

- **Capacity:** 200 Litres.
- **Flow rates:**
 - Flow rate: **5** litres per minute = Approx. 40 minutes.
 - Flow rate: **15** litres per minute = Approx. 13 minutes.



General rule: Seriously ill or injured casualties require a **minimum flow rate of 10 litres per minute.**

Notes: other possible colours of oxygen bottles.

Possibly silver with a green shoulder (American and dive O2 bottles) or black with a quartered white shoulder (old and probably not in circulation any more).

In New Zealand, the two major medical gas providers are now supplying ALL WHITE oxygen bottle, still pin coded as per original black and white bottles

Oxygen masks and Nasal Cannula (Cannula (from Latin "little reed"; plural cannulae):

A cannula is a tube that can be inserted into the body, often for the delivery or removal of fluid or for the gathering of data).

- **Simple oxygen facemasks – (low con)** Clear plastic / vent holes in walls to allow exhaust gases to escape and allow air to be taken in / deliver concentrations of about 35 to 60% at oxygen flow rates of 6 litres per minute.
- **Nasal Cannula** - Directly into the nostrils of the nose through prongs / flow rates similar to simple facemask / high flow rates dry the nose and are uncomfortable for the casualty / good for those casualties who will not tolerate a facemask 1-4 litres per minute (max)
- **Oxygen facemask with reservoir – (high con)** Achieve high flow rates by use of a reservoir bag / at high flow rates, concentrations of 90% can be achieved / used routinely for casualties who are spontaneously breathing 10 litres per minute.

Nasal cannula is for "I am concerned patients" 1-4 lts max

Low con mask is the norm for "sick patients" Mask should slightly fog on expiration and then clear

Hi con mask is for "very sick patients" reservoir bag remain reasonably full

BVM for non-breathing patients /IPPV

Overview:

The control of the body's temperature is very complex and involves a number of processes. Body temperature is regulated by the brain in response to factors such as disease and external temperature. Our normal temperature is about **36.7°C**. **Hyperthermia** is when the temperature of the body increases resulting in a heat illness. **Hypothermia** is when the body temperature decreases, resulting in a cold emergency. Increase or decrease of the body temperature can impair or stop body functions. This can cause life threatening emergencies that require immediate action and medical attention.

Cold Emergencies:**Overview**

Hypothermia occurs when your body temperature drops below **35°C**, causing the circulatory, respiratory, and nervous systems to slow down. Hypothermia is a cold emergency that requires immediate treatment, and if untreated it can cause cardiac arrest. Hypothermia often happens gradually. Elderly people and infants/children are especially susceptible. Hypothermia may develop over hours and in some cases days and is not uncommon to find an elderly person that has collapsed on the floor to be suffering hypothermia. It can happen within minutes if, for example, someone falls into icy cold river. Outdoor pursuits and adventurers are susceptible to environmental emergencies particularly hypothermia in the New Zealand outdoor setting.

Risk factors include:

- Exposure to cold
- Immersion in cold water
- severe trauma
- Dehydration
- Not moving for long periods of time
- Age-related physical problems
- Certain medical problems, such as heart failure, pulmonary infection
- Drugs and alcohol
- Mental impairment that causes someone to be unaware of cold

Signs and symptoms.

A patient experiencing hypothermia may display one or more of the following signs and symptoms:

- Shivering
- Altered level of responsiveness
- Confusion
- Cold skin
- Shallow breathing
- Weak pulse
- Cardiac arrest in severe circumstances.

Management:

The steps for the management of hypothermia are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS is activated).
- If possible, remove the patient from the cold environment.
- Remove any wet clothing.
- Attempt to slowly warm the patient with blankets and clothing.
- If unresponsive and breathing, place the patient a stable side position
- Be prepared for cardiac arrest in severe cases; follow DRSABCD

Heat illness:

Heat illness is caused by prolonged exposure to a hot environment. It is caused by heat and dehydration and can be associated with those physically highly activity.

Signs and symptoms of mild heat illness:

The initial symptoms are mild, but the patient can deteriorate, and their condition can become life threatening if untreated. A patient experiencing mild heat illness (heat exhaustion) may display one or more of the following signs and symptoms:

- Nausea
- Headache or dizziness
- Sweating
- General feeling of being unwell.
- Hot to touch cherry skin

Management:

The steps for the management of mild heat illness are:

- Stop all physical activity.
- Carry out primary assessment, DRS ABCD
- Move the patient to a cooler place preferably with cool air flow.
- Remove as much of their clothing as possible.
- Move the patient in to a comfortable position
- If **conscious** give small sips of cool water to drink.
- Sponge the patient's body with cool water or tepid bath
- Carry out secondary assessment
- Monitor and record vital signs.
- **Note:** *The patient should recover with cooling and re-hydration. If the patient is not recovering or they continue to deteriorate or become unresponsive, you should summon EMS immediately.*

Signs and symptoms of severe heat illness: (Heat Stroke) The body's cooling mechanism is compromised.

- Rapid pulse
- Shallow breathing
- Cool skin, often without any sweating
- Loss of coordination
- Unusual behaviour
- Collapse
- Seizures

Management:

The steps for the management of severe heat illness are:

- Carry out primary assessment, DRSABCD
- Seek medical attention (make sure EMS are enroute).
- Move the patient to a cooler place.
- Where possible have the patient lying down, if **unresponsive** and breathing, place the patient in a stable side position
- Remove as much clothing as possible.
- Sponge patient with water and try to create a current of air to increase the cooling effect. Use ice packs to cool (back of neck, knees, wrists if needed. Do not put ice directly on to the skin).
- Be prepared for cardiac arrest (in severe cases), follow DRSABCD

Emergency Childbirth

Medical Emergencies

Overview:

Childbirth is a natural process and complications are uncommon.

Signs and symptoms of an imminent childbirth:

- Obvious signs of late stages of pregnancy
- Waters breaks
- Mother says it is imminent, especially if she has had previous births
- Sudden increase in energy/contractions

Management;

The following procedure must be followed:

- Call for assistance (make sure EMS is activated)
- Ensure privacy/warm where possible.
- Encourage the woman to get in her most comfortable position
- Lay a clean towel or plastic sheet under the mother.
- Ensure good hygiene-wash hands, use gloves from PPK kit (**mother must be asked if she is allergic to latex**)
- If the membrane around the baby is intact, rupture this with your fingertip to allow the amniotic fluid to leak out
- Check to see if umbilical cord is around the infant's neck, slip over the head if possible
- Leave umbilical cord attached to baby
- Support the head (this normally appears first) do not pull
- the natural contractions will assist to deliver the baby

After the delivery:

- Baby should start to cry, encourage a response, carry out primary assessment on both baby and mum.
- Ensure the baby stays warm, wrap in towel, sheets, blanket, or anything else available to keep baby warm
- Encourage the mother to cradle - start breast feeding
- The placenta may take up to an hour to deliver **DO NOT PULL**, place in clean container, and give to attending EMS personnel or take to hospital.
- Rest and reassure Keep monitoring until EMS arrive.

Poisoning**Medical Emergencies****Overview**

Poisoning may be accidental or deliberate. **All precautions** must be taken for your own safety as you may be unaware of any inherent risks created by the casualty. These risks involve rescuing the patient and any subsequent resuscitation attempts.

In many situations, it will be important to identify the drugs or toxic substances used in the poisoning and determine the amount. As required, it will be helpful to ascertain types of pills and any empty bottles which are to accompany the victim.

Caution must be observed when any resuscitation attempt is required as you can be poisoned from what casualty has ingested or inhaled. Your safety is paramount, if in doubt move back to a safe point and request assistance from EMS.

Some common poisons include:

- Household cleaners
- Pesticides
- Weed killer
- Thinner based solvents
- Motor vehicle fumes (carbon monoxide poisoning)
- Pool chemicals
- Prescribed medicines

Poisons can enter the body by:

- Inhalation
- Absorption
- Ingestion
- Injection
- Instilled (into the eye)



Management:

- Beware of Danger! Consider **no** action due to nature of poisoning.
- Call for assistance (make sure EMS have been notified)
- Carry out primary assessment, DRSABCD (consider compression only CPR if risk of cross contamination)
- If unresponsive and breathing, place the casualty in a stable side position
- Try to find out what has been taken, how much and when.
- Contact NZ Poisons Centre for advice **Only** (0800POISON)- in an emergency contact EMS.
- Keep containers of chemicals or medication found
- Carry out secondary assessment
- Monitor and record vital signs
- **Do not** induce vomiting, no food or drink unless told to give by EMS.
- Rest and reassure, keep warm.

The main role of the National Poisons Centre is to provide advice to members of the public and health care professionals about acute poisoning situations.

NZ Poison Centre ☎ 0800 POISON (0800 764 766) Available 24/7

Please note you need to call the EMS in an emergency situation before calling for advice from the Poison Centre to reduce delays getting patient to advanced care.

Specific Poisons:

Cyanide

Cyanide may be present in the bush as it is used to eradicate pests. It comes in paste form or in pellets (Ferratox). Some organised groups carry the antidote (**Amyl Nitrite**), which is contained in ampoules.

Recognition:

- Headache
- Convulsions
- Breath: Smells of bitter almonds
- Confused, erratic behaviour
- Heart & Breathing failure

Management:

- There is a high risk of rescuers being poisoned by Cyanide, through absorption or inhalation.
- Wear gloves.
- Avoids vapours from the poison source/ breath of the casualty.
- Move to a well-ventilated area.
- If the patient is breathing, administer Amyl Nitrite by cracking the ampoule (whilst protecting your hand) and getting the patient to inhale the vapour.
- CPR required? Do not administer rescue breathes - Use compression only CPR. Transport the patient as a priority.

Ongaonga (Tree Nettle)

Contact with this plant can cause -

- Intense, burning pain
- Redness & swelling (affected area)
- Loss of coordination
- Anaphylactic (severe allergy) shock
- Difficulty in breathing
- Difficulty in vision
- Convulsions & paralysis

Management:

- Crushed up Dock leaves may relieve the pain
- Lay the casualty down with legs raised if showing signs of shock
- Use sticky tape to remove visible stinging hairs
- The use of a Ventolin inhaler may help
- Signs of Anaphylaxis? Adrenaline (EpiPen) may be used
- Antihistamines can help, Topical Stingose may alleviate rash.pain

If anaphylactic shock is suspected, arrange **urgent evacuation** as the patient may need adrenaline!

1080 Pellets (Sodium Fluoroacetate)

1080 is a substance found naturally in many plants throughout the world. Plants have developed it as a natural defence against browsing mammals. It is synthetically manufactured for use in pest control operations and is highly toxic to mammals (in particular).

Recognition (in humans):

Early Symptoms: Nausea, vomiting, tingling and numbness in face and hands, stomach pains, apprehension, and anxiety.

Later Symptoms: Muscular twitching, blurred vision, confusion.

Severe Symptoms: Coma, convulsions.

Management:

Ingestion:

- Seek immediate medical assistance in all cases where poisoning is suspected
- NZ National Poisons Centre recommends against inducing vomiting, never use any chemical means of inducing vomiting.

Eye Contact:

- Wash eyes with copious amounts of water.

Skin Contact:

- Wash exposed area twice with soap and water.

Contaminated Clothing:

- Remove contaminated clothing and wash before re-use.
- Clothing and must be decontaminated by washing in hot soapy water.

Do NOT induce vomiting or give anything by mouth if the patient is unconscious or convulsing!

Carbon Monoxide (CO)

CO has no smell or taste. It doesn't irritate your nose, mouth or skin and is invisible. It has caused **serious illness and deaths**, which are mostly preventable. It is the largest cause of death related to camping equipment in NZ. CO is a very flammable gas in high concentrations, it is a health hazard, and also a fire hazard!

Recognition:

- Headaches and dizziness.
- Bright pink skin.
- Erratic, confused behaviour.
- Convulsions.
- Circulatory & respiratory failure.

Management:

- Without placing yourself in danger, **ventilate** the area to remove the CO and/or remove the patient from the area.
- Conscious patient - place in **semi-sitting position** and **rest** (to make breathing easier)
- Unconscious patient - Carry out **primary survey** and **place in a stable side position**.
- Mild poisoning - the patient may recover spontaneously over time, however, should be seen by EMS.
- Severe poisoning - The patient **must be evacuated**. If available, 100% oxygen should be given.

Privacy and confidentiality

Client care

Privacy and confidentiality

As a company, Triple One Care recognises the importance of the individual's right to privacy. Your own workplace should have similar policies and procedures all students are encouraged to follow their workplace processes.

All people have a responsibility to do the right thing and to safeguard and protect the personal and health information collected by advanced first aiders and reduce risk of this information being used for other reasons than intent.

The Health Information Privacy Code 2020 has rules around the governance and protection of health information collected and how it is stored.

It gives guidance on who can access, and the rights of the individual data has been collected from.

Click the link here to access the Health Information Privacy Code 2020

<https://privacy.org.nz/privacy-act-2020/codes-of-practice/hipc2020/>

PENTHROX / PATIENT ASSESSMENT RECORD – *Only qualified personnel to administer*

Penthrox CAN be used when the patient is:

Conscious
Has no major blood loss
The pain is from injury
A medic can monitor them

Penthrox CANNOT be used:

More than twice-in one day
Head injury
Breathing Difficulty
Heart Problems
Kidney Disease
History of allergies
Pregnancy
Patient on antibiotics or anti-fungal
Hypothermia
A previous reaction to analgesic

Before use the Patient must be asked the following questions with answers circle:

- | | | |
|---|---|---|
| 1. Do you suffer from allergies (hypersensitivity) | Y | N |
| 2. Do you suffer from reoccurring increased body temperature (malignant hyperthermia) | Y | N |
| 3. Do you have kidney problems | Y | N |
| 4. Are you pregnant | Y | N |
| 5. Are you currently taking antibiotics or antifungal | Y | N |
| 6. Have you had any previous reaction to anaesthesia | Y | N |

YES to any of the above means patient must NOT be given Pentrox

Primary Medic Responsibility

Complete and sign form before delivery
Continually monitor the patient
Time and amount of Pentrox administered on PRF (Patient Report Form)
Discontinue immediately if any sign of adverse reaction e.g. respiratory distress, swelling of face/lips, rash

Medic Name: _____ **Signed:** _____ **Date:** _____

While attending to the patient, information will need to be recorded. Using a form to log details of the event/issue will help with the handover to EMS. It informs what has taken place and the care/treatment given to the patient. Below is an example of a patient report form, to help with recording vials and ongoing treatment whilst waiting for EMS. Information can easily get forgotten while caring for the patient/s especially in a stressful environment.

SITREP- Situation Report

This is a short report often given via phone, radio or in person to EMS as to the event happening and how many patients, what the event/details and conditions are for both environment and patients.

Information to be included and not limited to are:

One patient

Name – Estimated age – Patients' status – Chief complaint – Any other additional info, i.e. pain relief and safety conditions.

Multiple patients

Number of PT's – Estimate of PT's status codes – Number trapped – Any other additional info, i.e. pain relief and safety conditions.

PATIENT REPORT FORM

Patient Details:

Title _____ First Name: _____ Middle Name: _____ Surname: _____

Address: _____

Status	0	1	2	3	4
Initially					
Transfer					

Phone: _____ DOB ___/___/___ Age _____ M / F

Incident: Location _____ Time & Date _____

History -event _____

Chief Complaint, other _____

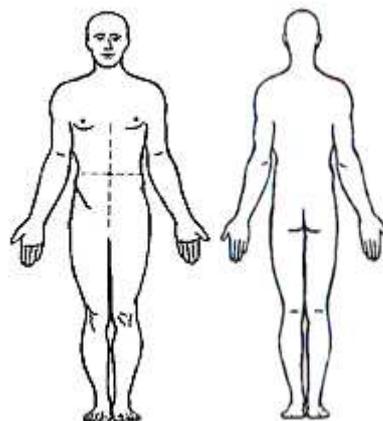
signs/symptoms _____

Assessment of patient _____

Treatment -what you have done. _____

Vital signs:

TIME						
LOC						
RESPS						
PULSE						
B/PRESSURE						
SpO2						
PAIN SCORE 1-10						
BGL						
PEARL						
COLOUR						
TEMP						
MEDICATION						



- A = Abrasion
- B = Burns
- C = Contusion
- D = Dislocation
- F = Fracture
- H = Haemorrhage
- I = IV Site
- L = Laceration
- M = IM Site
- P = Pain
- S = Swelling

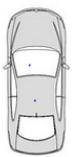
Cardiac Arrest:
 Witnessed?
Y N
 CPR prior?
Y N
 Effective?
Y N

Seatbelt or helmet? **Y N**
 Speed: _____
 Damage # _____
 Pt Position x _____
 Point of impact _____



Cardiac Arrest:
 Witnessed?
Y N
 CPR prior?
Y N
 Effective?
Y N

Seatbelt or helmet? **Y N**
 Speed: _____
 Damage # _____
 Pt Position x _____
 Point of impact _____



Ambulance Details:

Time called	Time Arrived	Officer/Amb details	Comment

Medic Details:

Name	Signature	Date	Event ID

Patient assessed but declines advice.

Patient or representative / caregiver signature: _____

TIME	MEDICATION	DOSE	ROUTE	MEDIC

NZRC GUIDELINES 2016 CPR

PRIMARY SURVEY	Secondary Survey
<p>D DANGER Check for any danger</p> <p>R RESPONSE Are they RESPONSIVE? If no</p> <p>S SEND FOR HELP CALL 111 and get AED</p> <p>A AIRWAY Assess & Open Airway (Head Tilt – Chin Lift)</p> <p>B BREATHING Check for Breathing</p> <p style="text-align: center;">LOOK * LISTEN * FEEL For no longer than 10 seconds</p> <p style="text-align: center;">IF UNRESPONSIVE & NOT BREATHING NORMALLY START CHEST COMPRESSIONS</p> <p>C Circulation <u>CPR</u> Start chest compressions Followed by 2 breaths Continue CPR at the ration of 30:2</p> <p><u>SEVERE BLEED</u> Immediately STOP arterial blood loss in conjunction with CPR if required</p> <p>D Defibrillations Attached AED if available and follow prompts</p>	<p>Head Check for trauma to face, pupil reaction and fluid from ears and nose, battle signs (bruising behind ears and black eyes)</p> <p>Neck check for pain, misalignment of vertebrae, swelling, deformity</p> <p>Spine check for pain, altered sensations, weakness in limbs, MOI, pins and needles, and burning sensations.</p> <p>Chest check even rise and fall during breathing, deformity around the ribs, unnatural sounds and movement</p> <p>Abdomen divide into four quarters, palpate and check for bruising and swelling.</p> <p>Hips check for swelling, carefully press in, if no sign of pain gently push down.</p> <p>Legs blood sweep, check for fractures, check range of motion</p> <p>Feet blood sweep, check range of motion and sensation, and movement.</p> <p>Arms blood sweep, check for fractures, check range of motion</p> <p>Hands check range of motion, fractures and sensation</p> <p>Check all jewellery for medic alert information. Check pockets for medication Check phone and wallets for ICE information Ask bystanders for witness accounts including MOI. Position patient appropriately.</p>

- S** Signs and Symptoms
- A** Allergies
- M** Medication
- P** Pervious History
- L** Last Oral Intake
- E** Events leading to the injury

Normal Vital Signs		
	Respirations/min	Pulse/min
Adult (8yrs +)	10-20	60-100
Child (1-8)	15-25	80-120
Infant (0-1)	20-30	100-140

- W** Warmth
- R** Reassurance
- A** Assessing Again
- P** Positioning
- T** Treatment
- Levels of Consciousness**
- A** Alert
- V** Voice
- P** Pain
- U** Unresponsive

<p>Pain</p> <p>O Onset (when did it start, what were you doing)</p> <p>P Provokes (what makes it better/worse)</p> <p>Q quality (type of pain, sharp, burning dull etc.)</p> <p>R Region/Radiates (where is the pain & does it go anywhere)</p> <p>S Severity (out of ten)</p> <p>T Time – history since onset (does it come and go, has it changed)</p>	<p>Causes of Unconsciousness</p> <ul style="list-style-type: none"> - Alcohol - Epilepsy - Insulin - Overdose - Under Dose - Trauma - Infection - Physiological - Shock 	<p>Bleeding and Shock</p> <ul style="list-style-type: none"> - Direct pressure - Elevation - Indirect pressure - Tourniquet - Warmth - Airway - Reassurance - Rest - Raise legs 30cm
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