Australian First Aid
Acknowledgements

This Australian First Aid manual was created by MR Kioloa volunteer, Wido Melis (TAE40110 Certificate IV in Training and Assessment, Accredited First Aid Trainer), for Marine Rescue NSW (MRNSW) within the scope of the Australian Vocational Education and Training (VET) system.

Thank you to all the MR volunteers in the photos and those who assisted. Lisa Hardwick for her great photography and Dr Peter Taylor for his proofreading, is also greatly appreciated.

The diagram of the Lymphatic System on page 8 was taken from the patient information website of Cancer Research UK http://www.cancerresearchuk.org/cancer-help with their kind permission.

MRNSW offers special thanks to St John Ambulance Australia for providing written copyright permission to use its Fact Sheets at http://www.stjohnnsw.com.au/mc_fs.html.

Further references are listed at the end of this book.

Version Control

The information in this Manual is periodically updated. Trainers and Assessors must ensure they use the most recent version available in OTTER.

[V2.0 December 2014]

Disclaimer

The information contained in this Learner Manual follows first aid practices in Australia as defined by the Australian Resuscitation Council. It is an information source and not a substitute for undertaking first aid courses with an approved training provider.

Although every effort has been made to ensure that the information is accurate at the time of publication, Marine Rescue NSW (MRNSW) disclaims all responsibility and liability (including without limitation and liability in negligence) for all expenses, damages and costs you may incur as a result of the information contained in this Manual being inaccurate or incomplete in any way, or for any other reason.

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Any copyright or enquiries related to this Manual should be addressed to:

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About Marine Rescue NSW

Marine Rescue NSW (MRNSW) is the State’s official volunteer marine rescue service, with more than 3,200 volunteer members based in 47 units: 45 along the coastline from the Queensland border to Eden and two units on inland waters, Marine Rescue Alpine Lakes in the Snowy Mountains and Marine Rescue Moama on the Murray River. Marine Rescue NSW’s mission is to save lives on the water.

MRNSW crews respond to MAYDAY and other distress calls. We are tasked to carry out Search and Rescue operations by the NSW Police Force Marine Area Command, which is responsible for the coordination of rescue operations on NSW waters.

MRNSW responds to boating medical emergencies.

- MRNSW members have first aid training
- The fleet is equipped with life-saving Automated External Defibrillators (AEDs)
- MRNSW can transport medical crews to remote locations
- MRNSW works with NSW Ambulance paramedics to help boaters needing medical attention

Through its enterprise Registered Training Organisation (RTO), MRNSW provides first aid, safety and marine emergency response training to meet State Rescue Board accreditation requirements and to ensure high quality marine incident management.

Learning

MRNSW, recognising that learning is a lifelong process and that how people learn varies from person to person, offers flexible training that involves the participants by encouraging interaction. Learning sessions are very practical and hands-on. Participants are challenged to practise new skills through simulations involving volunteers as casualties, while at the same time they are joining in discussions, and question and answer sessions. All demonstration and practice equipment and first aid supplies will be provided.

Course preparation

Please read this Manual before coming to class and complete the pre-workshop booklet for submission to your Trainer at the start of the course.

Carry securely on your person any medications you may require during the course. Wear long trousers, covered shoes and hair tied back to participate in the training and assessment scenarios.

For MRNSW first aid workshops read:

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Assessment for competencies

You must demonstrate competence in the required skills and knowledge to be assessed as competent.

The assessment tasks are:

1. theory test
2. series of individual/group practical scenarios based on first aid treatments you have been taught

Your assessor will advise you of your results at the conclusion of the Course.

Appeals

If you are unhappy with the outcome of an assessment, speak with your Assessor to discuss what can be done. Where this does not fix the problem to your satisfaction, please contact your Regional Training Manager who will review your appeal and may organise another assessment with an independent assessor.

Complaints

If you have a complaint we will deal with the matter quickly and professionally and in the strictest confidence under SOP ADM06 Grievances.

Language, literacy and numeracy

Please advise your Trainer at the start of the Course if you have any reading or language difficulties or other special needs. The MR RTO access and equity policy makes sure that you will receive the assistance and support you need to meet your training goals.

Course introduction

First Aid is the initial help given to a sick or injured person until full medical treatment is available.

The priorities of first aid are to:

- preserve life
- prevent deterioration and
- promote recovery of the casualty

You also need to be aware of the emergency situation environment and circumstances and act to protect yourself and the casualty.

Learning the skills and acquiring a sound knowledge of first aid will give you greater confidence to render assistance when required to do so. It may well save the life of a stranger or person close to you.

If you arrive at a major incident with numerous casualties, it will be wise to keep the priorities of first aid in mind. They will assist you to decide on the priority for treatment when you face such a dilemma. Don’t panic, just try your best and seek help.

If you are a member of a team responding to a medical emergency, remember at the outset to appoint a team leader to take charge and delegate roles or activities to facilitate the efficient care and treatment of the casualty.

As the knowledge in the science of medicine advances, the methods employed in rendering first aid to the sick and the injured alter accordingly. Changes to the rendering of first aid are regularly made and taught to reflect ‘best practice’.

This Manual has been written to support your training as you gain or refresh first aid skills and knowledge for use in an emergency situation.

Keep this Manual with your first aid kit as a ready reference.
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First Aid Legislation, Codes, SOPs and Fact Sheets

Occupational Health and Safety (Maritime Industry) ACT 1993
Marine Safety (Domestic Commercial Vessel) National Law 2012

State Rescue Board
• State Rescue Board Policy
• Marine Standing Operating Procedures for accredited SARCC, MRU & MRB (SRB Marine SOP)
  • SRB SOP 06
  • SRB Annex F

Marine Rescue NSW

MRNSW SOPs
• SOP ADM04 Health Safety and Welfare
• SOP ADM08 Members’ Code of Conduct
• SOP ADM14 Drugs, Alcohol and Tobacco
• SOP OP03 Vessel Documentation and Compliance
• SOP OP17 Incident Reporting
• SOP OP25 Critical Incident Support Services

Australian Resuscitation Council (ARC) Guidelines www.resus.org.au
LEGAL AND ETHICAL ISSUES

Firstly, no Good Samaritan (a person acting in ‘good faith’ without expectation of a reward) or volunteer in Australia has been successfully sued for consequences of rendering assistance to a person in need.

The Civil Liability Act 2002 addresses the personal liability of members and staff of an emergency or rescue management organisation. The Act specifies that a matter or thing done by a member does not, “if the matter or thing was done in good faith for the purposes of executing this or any other Act, subject the member or controller personally to any action, liability, claim or demand”.

However, there are some legal and ethical issues to consider in providing first aid:

✻ Duty of care
✻ Consent
✻ Cultural awareness
✻ Confidentiality
✻ Recording

Duty of care (obligation)

In a workplace situation there is an automatic duty of care to staff and customers to provide reasonable assistance – failure to do so may result in litigation. In the community, you are under no obligation to provide first aid.

If you choose to provide first aid assistance, you have a duty to use your knowledge and skills in a responsible fashion.

Consent

Before providing first aid, you must first gain consent from the casualty or parent/guardian in the case of a minor. If the casualty is unresponsive or of unsound mind and therefore unable to give consent, you may assist under the assumption that he/she would have given consent if conscious and/or orientated. Similarly, in the case of a minor with life-threatening illness/injury without the presence of a parent/guardian, you may assist.

Cultural awareness

You need to be culturally aware, sensitive and respectful at all times.

Confidentiality

Personal information about the health of a casualty is confidential. This includes details of medical conditions, treatment provided and the result of tests. Disclosure without the person’s written consent is unethical and may, in some cases, be illegal.

Recording

First aiders should always make a record of the details of the incident and any assistance given. It is important to keep this record in case you are ever asked about it at a later stage. Records may be used in Court so ensure your notes/records are legible.

Details to record should/may include:

✻ Date, time, location of incident
✻ Casualty details (name, age, address)
✻ Contact person for casualty (family/friend)
✻ What happened
✻ Observations
✻ Assessment
✻ Treatment/assistance
MANAGING AN EMERGENCY

Remember the priorities of first aid – the three Ps:

1. **Preserve** life
2. **Prevent** deterioration
3. **Promote** recovery

- **Assess** the situation quickly (see Basic Life Support on inside back page)
- **Ensure safety** by identifying and minimising hazards that may pose a risk of injury or illness to self and others (this may mean moving casualty)
- **Follow** infection control principles and procedures
- **Identify** the nature of injury and/or illness
- **Manage** the casualty promptly and appropriately (primary and secondary examination)

- **Organise** bystanders (e.g. ask for assistance, create space for oxygen)
- **If more than one casualty, prioritise** treatment (Triage)

- **Who needs immediate treatment to save their life?**
- **Who will benefit and who won’t?**
- **If in doubt, the unconscious victim has priority!**

- **Send/call for help**
- **Gather and provide necessary information and, where possible, keep a written record**
- **Stay** with casualty until medical help arrives

CHAIN OF SURVIVAL

*Measures taken to maximise a casualty’s chance of survival* (linked to cardiac arrest)

- **Early recognition and call for help**
  - To prevent cardiac arrest
- **Early CPR**
  - To buy time
- **Early defibrillation**
  - To restart the heart
- **Post resuscitation care**
  - To restore quality of life
HUMAN BODY STRUCTURE

Basic knowledge of the human body anatomy will assist you with diagnosis and the care and treatment of the casualty.

Central nervous system
✚ The brain controls/regulates all body functions including respiratory and cardiovascular systems.
✚ The spinal cord delivers the signals to all parts of the body.

Human skeleton
Made up of 206 bones.
Main functions include:
✶ support body shape
✶ permit movement, e.g. ball and socket
✶ provide protection, e.g. spinal cord, major blood vessels, eyes, ears, lungs, heart
HUMAN BODY STRUCTURE (cont.)

Cardiovascular system
- Involves the heart, blood vessels and blood
- The heart is the pump that drives blood around the body
- The main vessels are:
  - arteries (take blood from the heart) and
  - veins (return blood to the heart)
- Blood transports oxygen to the body cells from the respiratory system. Blood also transports sugars, proteins, hormones, chemicals and other substances around the body for use and elimination.

Respiratory system
The function of the respiratory system is to supply oxygen and to remove carbon dioxide from cells.

Lymphatic system
Part of the circulatory system comprising a network of conduits called lymphatic vessels that carry a clear fluid called lymph (essentially recycled blood plasma) towards the heart.
## UNCONSCIOUS CASUALTY

### Primary survey/action plan (DRSABCD)

#### Unconscious person – Abnormal or NO breathing (CPR)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DANGER</strong></td>
<td>Identify and minimise hazards for protection of self, others, casualty</td>
</tr>
<tr>
<td><strong>RESPONSE</strong></td>
<td>Talk and touch, speak loudly and clearly – hearing is last sense to go</td>
</tr>
<tr>
<td><strong>SEND FOR HELP</strong></td>
<td>Telephone/use runner; emergency <strong>000</strong> or mobile <strong>112</strong></td>
</tr>
<tr>
<td><strong>AIRWAY</strong></td>
<td>Open – Check – Clear</td>
</tr>
<tr>
<td><strong>BREATHING</strong></td>
<td>Observe chest rise/fall – Listen for breath sounds – Feel for escape of air</td>
</tr>
<tr>
<td><strong>CPR</strong></td>
<td>Start chest compressions if not breathing or abnormal breathing</td>
</tr>
<tr>
<td><strong>DEFIBRILLATION</strong></td>
<td>If available, attach/use Automated External Defibrillator (AED)</td>
</tr>
</tbody>
</table>

**Recovery Position** facilitates draining of fluids (e.g. blood, vomit) to avoid suffocation

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### Unconscious person – Breathing (Recovery Position)

<table>
<thead>
<tr>
<th>Steps</th>
<th>Actions</th>
</tr>
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<tbody>
<tr>
<td><strong>DANGER</strong></td>
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<tr>
<td><strong>AIRWAY</strong></td>
<td>Open – Check – Clear</td>
</tr>
<tr>
<td><strong>BREATHING</strong></td>
<td>If breathing, place in Recovery Position</td>
</tr>
</tbody>
</table>

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### Secondary survey

A thorough head-to-toe examination of the casualty should be completed after the primary survey is completed with the priority focus on life-threatening situations. The best way to achieve this is to systematically look and feel for:

- deformity (spine/fractures)
- swelling
- open wounds
- bleeding
- bruising
- colourless fluid from ears (may have blood) for brain injury
- circulation in extremities (take and record pulse rate if possible)

With a conscious casualty, explain what you are going to do and ask him/her about prior/existing injuries or sickness. During the examination ask them:

- to tell you of tenderness/pain
- to bite to check jaw
- to wiggle fingers/toes
- to squeeze your hands to check for spinal injury and move each limb in turn to check for arm/leg injury
HISTORY, SIGNS and SYMPTOMS

History
It is vital to obtain an adequate and accurate account of the incidents leading up to the injury to the casualty. A history can be obtained from the casualty or a bystander.

A common acronym for obtaining a history is ‘SAMPLE’.

- Signs and symptoms
- Allergies
- Medication
- Past illnesses
- Last time the casualty ate or drank
- Event – what happened, where and when

Signs
Signs are what the first aider can see or feel for themselves.

Examples of signs are:
- bleeding
- swelling
- bruising
- deformity
- vomiting

Symptoms
Symptoms are things the casualty tells the first aider.

Examples of symptoms are:
- “I feel sick”
- “my wrist hurt”
- “I feel dizzy”
- “I am very cold”
- “I have a headache”
CPR is the technique of chest compressions combined with rescue breathing. The purpose is to temporarily maintain a circulation sufficient to preserve brain function until specialised treatment is available.

CPR should begin on a casualty who is unresponsive and not breathing normally, even if he / she takes an occasional gasp (absence of normal breathing).

CPR rarely leads to harm to the casualty who is eventually found not to have suffered a cardiac arrest. However, providing CPR to a casualty who needs resuscitation will dramatically increase his/her chance of survival.

Steps (DRSABCD)

✚ Check for Danger
✚ Check for Response
✚ Send for help
✚ Open/clear Airway
✚ If not normal breathing start CPR
  ✲ 30 Chest Compressions: press down on sternum to depress 1/3 @ 100 per minute followed by 2 breaths over mouth with nose pinched closed.
  ✲ Continue compressions and breaths with 30:2 ratio.
✚ Attach an Automated External Defibrillator (AED)

Automated External Defibrillator (AED)

Ventricular fibrillation is caused by a disturbance of your heart's electrical system. The problem causes the ventricles to fibrillate (quiver like jelly on a plate) rather than beat normally. This means that your heart fails to pump blood around your body.

An AED is a device that analyses and looks for shockable heart rhythms, advises the rescuer of the need for defibrillation and delivers a shock if needed. Different brands are on the market, however, they all have the following in common:

✔ Safe to use
✔ Effective to use
✔ Easy to use with instructions
✔ Have spoken prompts to follow

AEDs are NOT for use on children under 12 months, a paediatric pad/cable is often included, if not, an adult pad/cable may be used on children in cardiac arrest

Actions

✚ Attach the self-adhesive electrode pads (may have to dry and/or shave chest)
✚ Follow the spoken prompts (some also have visual prompts)
✚ Ensure nobody touches casualty while:
  ✲ AED is analysing the rhythm and when delivering shock

If you can’t or don’t wish to give rescue breaths then do the compressions continuously, but ensure you tilt the head (not the neck) to obtain a clear airway
WOUNDS and BLEEDING

Bleeding can be external (obvious) or internal (often not seen); it can be severe or minor. Serious wounds involve damage to blood vessels and may cause death.

Bleeding is classified according to the type of blood vessel damaged:
- Artery (bright red, spurting)
- Vein (dark red, flowing)
- Capillary (bright red, oozing)

Severe bleeding  Life threatening

- Follow DRSABCD
- Check wound for visible foreign bodies – don’t remove
- Control bleeding – direct pressure over wound, raise/support limb above heart level
- Lie casualty down
- Bandage wound
- Check circulation
- Treat for shock
- If unconscious, place in recovery position

Amputation
- Collect amputated part, keep dry and don’t wash
- Place amputated part in plastic bag or wrap in waterproof material and keep cold (iced water) – don’t allow to freeze as this will kill tissue
- Ensure amputated part goes to hospital with the casualty

The aim is to reduce blood loss, therefore, if you are unable to stop the bleeding:
- Apply broad bandage (>5 cm) on upper arm/leg above the wound and tighten until bleeding stops. Use this as a last resort

Embedded object (e.g. glass, stick, knife)
- Do NOT remove object
- Apply indirect pressure, with padding around the object, and place pressure on the pad
- Bandage firmly over the pad to keep in place
- Do NOT shorten object unless it is unmanageable

For Needlestick injuries, immediately:
- wash with soap and water
- see a doctor

Visible internal bleeding
Can be seen by bleeding from:
- Ears (bright, sticky blood may be mixed with clear fluid)
- Lungs (frothy, bright red blood coughed up)
- Stomach (vomiting dark red blood)
- Urinary tract (dark or red urine)
- Anus/vagina (red blood possibly mixed with mucus)

Concealed internal bleeding

Signs and symptoms
- Breathing shallow-rapid
- Pain/tenderness
- Nausea and/or vomiting
- “Guarding” of the abdomen
- Visible swelling of abdomen
- Skin pale-cool-clammy
- Bruising

Care and treatment
- Follow DRSABCD
- If conscious, lie casualty down with legs elevated and knees bent
- If unconscious, turn to recovery position
- Reassure, loosen clothing
- Treat injuries/shock
- Give nothing by mouth

Nose bleed
- Pinch soft part of nose and lean slightly forward
- Ask casualty to breathe through mouth
- Maintain posture and pinched nose for 10 minutes. If bleed is longer than 20 minutes get medical assistance
- Apply cold compress to forehead and/or neck
SHOCK

Shock is ineffective blood circulation due to loss of blood volume and/or loss of blood pressure. It can be life-threatening and needs medical attention.

Causes:
- Bleeding
- Major/multiple fractures
- Brain/spinal cord injury
- Severe burns/scalds
- Dehydration
- Allergic reaction
- Heart attack
- Severe infection

Signs and symptoms
- Weak, rapid pulse
- Cold, clammy skin
- Rapid breathing
- Faintness/dizziness
- Confusion
- Nausea
- Pallor face, fingernails, lips

Care and treatment
- Follow DRSABCD
- Reassure
- Lie casualty down, raise legs with knees bent
  - unless fracture or snake bite
- Treat injuries, loosen tight clothing
- Keep casualty warm without overheating
- Give small sips of water unless abdominal trauma
- Recovery position if:
  - difficulty with breathing
  - unconscious
  - likely to vomit

ABDOMEN and PELVIS

The abdomen contains major organs, including the stomach, liver, intestines, kidneys, bladder, bowel and, in females, the reproductive organs. The pelvis is the bony structure which protects the organs of the lower abdomen.

Any pelvic injury or acute illness/injury to the abdominal area requires prompt medical attention.

Signs and symptoms
- Find out history of injury (frequently the result of accident, fall or crush)
- Abdominal injury can be open with bleeding, bruising or tenderness
- Visible swelling
- Severe pain (may assist to determine if pelvic/abdominal injury)
- Nausea and/or vomiting blood
- Guarding abdomen in foetal position

Care and treatment
- Follow DRSABCD
- If conscious, lie casualty down with legs elevated and knees bent
- If unconscious place in recovery position
- Reassure, loosen clothing
- Treat injuries/shock
- Give nothing by mouth
### EYE and FACIAL

Any injury to the **face** or **head**, especially injuries to the eyes, must be considered serious. The eye is made up of soft tissues and fluid. It is easily damaged and, because of the risk of full/partial loss of sight, extra care must be taken. Eye and facial injuries have clear **Signs and Symptoms** and are treated as follows.

<table>
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<th>Care and treatment</th>
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</table>
| Small objects in the eye, e.g. grit, eyelash, insect | ✓ Gently irrigate eye (use sterile eye saline/clean water)  
✓ If object still in eye, cover eye with eye pad or dressing  
✓ Casualty to seek medical assistance |
| Penetrating eye injury                      | ✓ Follow DRSABCD  
✓ Lie casualty on back – **do NOT attempt** to remove object  
✓ Place pads around the eye or a foam cap over it  
✓ Gently bandage in place  
✓ Call **ambulance** (do not give any food or drink) |
| Direct blow to the eye                      | ✓ Follow DRSABCD  
✓ Lie casualty on back – ask not to move eyes  
✓ Cover eye with dressing – ensuring **no pressure** on eye  
✓ Call **ambulance** |
| Bleeding from the ear                       | ✓ Follow DRSABCD  
✓ **Do NOT plug** ear canal **NOR** administer any drops  
✓ Allow fluid to drain freely  
✓ Place casualty on side with affected ear down  
✓ Call **ambulance** |
| Foreign object in the ear                   | ✓ **Never put anything into ear** e.g. cotton buds, tweezers  
✓ **Do NOT try** to remove foreign objects from ear(s)  
✓ **(ONLY ever try to remove insects by gently pouring some vegetable oil or warm water into the affected ear)**  
✓ Seek medical assistance |
| Tooth knocked out                           | ✓ Gently clean dirt off tooth with casualty’s own saliva or clean water, put tooth back in open socket and ask casualty to hold in place (if unable, store in milk or cold water)  
✓ If tooth has been in contact with dirt/soil, advise casualty to see a Doctor  
✓ Casualty to see **Dentist** urgently |
| Bleeding nose                               | ✓ Covered in Bleeding (page 12) |

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**Some sources suggest that the injured eye be covered. However, covering both eyes whenever possible will stop the casualty from moving the injured eye.**

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![Human Eye](image1.png)  
**Human Eye**  
- Sclera  
- Iris  
- Cornea  
- Pupil  
- Lens  
- Conjunctiva  
- Vitreous  
- Choroid  
- Optic nerve  
- Macula  
- Retina  

![Human Ear](image2.png)  
**Human Ear**  
- Ear canal  
- Inner ear  
- Eardrum  
- Middle ear  
- Eustachian tube
CHEST INJURIES

Care and treatment

Fractured ribs

- Follow DRSABCD
- Place casualty in comfortable position
- Encourage casualty to breathe with shallow breaths
- Place ample padding and hold on chest with arm on injured side. Wrap broad bandage around chest and arm and secure.
- If unconscious, place in recovery position injured side down

Flail chest

- Follow DRSABCD
- Place casualty in comfortable position (normally half-sitting, leaning to the injured side)
- If unconscious, place in recovery position injured side down
- Loosen tight clothing, place large bulky dressing over loose area with a firm bandage
- Call ambulance

Penetrating chest wound

- Follow DRSABCD
- Place casualty in whatever position makes breathing easiest
- Cover the wound using casualty’s own hand, or
- Place plastic dressing over wound and seal three sides with tape (not bottom) to allow fluid to drain
- Call ambulance

The chest contains two of the body's most important organs, the heart and the lungs. Chest injuries are painful, complicated and potentially life threatening.

Not counting bruising and muscular aches, there are three main types of chest injuries.

1. Fractured ribs

A simple rib fracture is rarely life threatening but is painful. The greatest risk from fractured ribs is the possibility that sharp, broken ends of bone can cut or puncture the lungs or heart.

Casualty must be kept still and protected from further blows/sudden movements that might cause broken rib ends to move.

2. Flail chest

Flail chest occurs when a section of rib cage is broken away from the rest of the ribs. This section floats in place, and as the casualty breathes it moves in the opposite way to the rest of the chest. The casualty will often have acute/severe chest pain, difficulty in breathing and be likely to be gasping for air.

3. Penetrating chest wound

This injury is an open wound through which air can be sucked in and out of the chest cavity. It can lead to the collapse of a lung and pooling of blood in the area, which may involve fractured ribs or punctured lungs. Blood-stained bubbles will form around the wound and the sound of air being sucked into the chest may be heard. Casualty will experience pain at the wound, pain and difficulty in breathing and may lose consciousness.
ASTHMA

Asthma is a disease of the airways, the small tubes which carry air into and out of the lungs.

When you have asthma symptoms, the muscles in the airways tighten and the lining of the airways swell with sticky mucus, narrowing the airways so there is less space for the flow of air into and out of the lungs. Severe asthma attacks can be life threatening.

**Signs and symptoms**

<table>
<thead>
<tr>
<th>Mild attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Dry cough</td>
</tr>
<tr>
<td>+ Wheezing (during exhalation)</td>
</tr>
<tr>
<td>+ Breathless (speaks in sentences)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moderate attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Wheezing (during exhalation and inhalation)</td>
</tr>
<tr>
<td>+ Breathless (speaks in single words or phrases)</td>
</tr>
<tr>
<td>+ Rapid breathing</td>
</tr>
<tr>
<td>+ Anxious</td>
</tr>
<tr>
<td>+ Pale and sweaty</td>
</tr>
<tr>
<td>+ Rapid pulse</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Severe attack</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Wheeze inaudible (no air movement)</td>
</tr>
<tr>
<td>+ Struggling to breathe (can’t speak)</td>
</tr>
<tr>
<td>+ Cyanosis (blue lips)</td>
</tr>
<tr>
<td>+ Distressed</td>
</tr>
<tr>
<td>+ Collapse (respiratory arrest)</td>
</tr>
</tbody>
</table>

*Asthma reliever medicine is unlikely to harm anyone even if they don’t suffer from asthma*

Use of an improvised spacer will increase the effectiveness of getting the medication into your lungs by 400%

**Care and treatment**

- Sit casualty comfortably upright
- Give four puffs of a blue/grey reliever (e.g. Ventolin, Asmol or Airomir)
  - Use a spacer if available, or improvise, but don’t delay
  - Give one puff at a time with four breaths after each puff
- Wait four minutes then give four more puffs if casualty still doesn’t breathe normally
- Call an **ambulance immediately** if casualty still can’t breathe normally
- Repeat medication until ambulance arrives or casualty improves
- If casualty collapses – **DRSABCD**

- Rescue breaths will often require greater force to inflate lungs
- If a severe allergic reaction is suspected, treat as for ANAPHYLAXIS (see page 17)
ALLERGIES / ANAPHYLAXIS

Allergy is a reaction to substances in the environment that are harmless to most people.

Anaphylaxis is the most severe form of allergic reaction and is potentially life threatening.

These often involve more than one body system (e.g. skin, respiratory, gastro-intestinal and cardiovascular) and usually occurs within 20 minutes to two hours of exposure to the trigger.

Common triggers of severe allergies/anaphylaxis include:

+ Food – e.g. milk, eggs, peanuts, fish, shellfish, wheat
+ Bites and stings – e.g. bee, wasp, ants
+ Medication – both over-the-counter and prescribed medication
+ Other – e.g. latex

Many anaphylaxis sufferers carry an EpiPen® or AnaPen®

Care and treatment

+ DRSABCD
+ Place in comfortable position
+ If available assist with adrenaline with EpiPen® or AnaPen®
+ Record time adrenaline was given
+ Follow casualty’s Action Plan
+ Call for ambulance
+ Administer asthma medication for respiratory symptoms

Signs and symptoms of Anaphylaxis

Central nervous system
• Light headedness
• Loss of consciousness
• Confusion
• Headache
• Anxiety

Respiratory
• Shortness of breath
• Wheezes or stridor
• Hoarseness
• Pain with swallowing
• Cough

Gastrointestinal
• Crampy abdominal pain
• Diarrhea
• Vomiting

Skin
• Hives
• Itchiness
• Flushing

Pelvic pain

Many anaphylaxis sufferers carry an EpiPen® or AnaPen®

EpiPen®

+ Remove from packaging
+ With fist around EpiPen® pull off blue safety release
+ Place orange end against outer mid-thigh (with/without clothing)
+ Push down hard until a click is heard or felt and hold in place for 10 seconds
+ Remove EpiPen® and massage injection site for 10 seconds

AnaPen®

+ Remove from packaging
+ Pull off black needle shield
+ Pull off grey safety cap from red button
+ Place needle end firmly against outer mid-thigh at 90° angle (with/without clothing)
+ Press red button so it clicks and hold for 10 seconds

Never put thumb, fingers or hand over black tip. Do NOT remove grey activating cap until ready.
HEART CONDITIONS

Heart attack (blockage in coronary artery)
The heart is a muscle that needs good blood flow to keep it healthy. A heart attack occurs when a blood clot completely blocks the flow of blood and seriously reduces blood flow to the heart. As a result, some of the heart muscle begins to die.

Angina (cramping of heart muscle)
Angina is chest pain/discomfort caused by insufficient blood flow and oxygen to the heart muscle. In most cases the lack of blood flow is due to a narrowing of the coronary arteries. It usually occurs during exertion, severe emotional stress, or after a heavy meal when the heart muscle demands more blood than the narrowed coronary arteries can deliver.

Signs and symptoms
(similar for angina and heart attack)
✚ Central chest pain or discomfort may:
    ※ be described as tightness, heaviness, squeezing or like indigestion
    ※ be severe, moderate or mild
    ※ spread to the neck, throat, shoulders, back or either/or both arms
✚ Shortness of breath
✚ Sweating
✚ Dizziness
✚ Nausea/vomiting

Care and treatment
(both angina and heart attack)
✔ Follow DRSABCD
✔ Rest casualty in comfortable position (sit or lie down)
✔ Call ambulance
✔ Loosen tight clothing
✔ If a conscious casualty has medication for angina (tablet or oral spray) then assist casualty in taking it as prescribed
✔ Give Aspirin (300 mg) if directed. Dispersible Aspirin is preferred
✔ Monitor response and breathing and be prepared to give CPR

‘Cardiac Arrest’ is the cessation of effective pumping action of the heart.

A major difference between angina and a heart attack is that angina attacks don’t permanently damage the heart muscle.

The Heart
- Oxygenated Blood
- De-Oxygenated Blood

![Heart Diagram]
When oxygen, in the blood supply, is cut off from cells in the brain it damages brain tissue. An arterial blood clot blockage (an occlusion) or a ruptured artery inside the brain (cerebral haemorrhage) are the main causes of a stroke.

**Signs and symptoms**
- May suddenly fall to the ground – “struck down”, hence “stroke”
- Confusion (dazed)
- Headache (sudden and severe)
- Unequal-sized pupils
- Blurred vision
- Drooping of one side of face
- Slurred speech
- Difficulty swallowing (drooling)
- Weakness/paralysis (one side of body)
- Loss of balance
- Incontinence (bladder/bowel)
- Seizure
- Unconsciousness

**Care and treatment**
- Prompt action (prevents further brain damage and assists in optimum recovery)
- Complete FAST test (below)
- If casualty fails any part, call ambulance
- Make casualty comfortable
- Reassure
- If unconscious place in recovery position
- Maintain body temperature

**FAST**
- **F**ace: Check their FACE. Has their mouth dropped?
- **A**rms: Can they lift both ARMS?
- **S**peech: Is their SPEECH slurred? Do they understand you?
- **T**ime: TIME is critical. If you see any of these signs, call 000 now!
Seizures are sudden temporary changes in physical movement, sensation, or behaviour caused by abnormal electrical impulses in the brain. Depending how many muscles are affected by the electric impulses, a seizure may cause sudden stiffening of the body or complete relaxation of the muscles, which can make a person appear to be paralysed temporarily. In severe cases the casualty may be flailing his/her limbs uncontrollably. These seizures are sometimes referred to as fits or spells. The terms convolution and seizure can be used interchangeably.

Epilepsy is a disorder of brain function that takes the form of recurring convulsive or non-convulsive seizures.

Febrile convulsions are seizures caused by high fever (>38°C) and usually occur in a small number of children aged between 6 months and 6 years.

### Signs and symptoms

#### FEBRILE CONVULSION (Child 6 months – 6 years)
- Fever
- Muscle stiffening
- Twitching or jerking of face and limbs
- Eyes rolling upwards
- Blue face and lips
- Unconsciousness

#### EPILEPTIC SEIZURE/CONVULSION
- Sudden cries
- Falls to the ground
- Stiffens and lies rigid for a few seconds
- Jerky, spasmodic muscular movements
- Looks very pale and has blue-tinged lips
- Excessive saliva from the mouth
- Sometimes bites tongue or cheek
- Loses control of bladder and bowels
- Becomes extremely tired, confused or agitated afterwards

### Care and treatment

#### FEBRILE CONVULSION

**During the convulsion**
- Place child on floor or place of safety
- Turn child onto side
- Do NOT restrain the child

**After the convulsion**
- DRSABCD
- Remove excess clothing/wrappings
- Cool child with fan and/or sponging
- Seek medical aid

#### EPILEPTIC SEIZURE/CONVULSION

**During the seizure**
- Do NOT try to restrain person
- Do NOT put anything in their mouth
- Do NOT move the person unless in danger
- Protect the person from injury
- Place something soft under head and shoulders
- Record duration of seizure

**After the seizure**
- DRSABCD
- Recovery position when jerking stops, or immediately if person vomits or has food/liquid in mouth
- Attend any injuries resulting from seizure
- Do NOT disturb if person falls asleep
- Call ambulance if:
  - seizure continues for five minutes
  - another seizure quickly follows
  - person is injured, diabetic, pregnant

---

20 MARINE RESCUE NSW ~ First Aid v2.0 © MRNSW
An imbalance between glucose and insulin levels in the body may result in:

- **Hypoglycaemia** *(low blood sugar)* or
- **Hyperglycaemia** *(high blood sugar)*

The symptoms of low blood sugar progress more rapidly than high blood sugar and must be addressed quickly.

### Signs and symptoms

#### Low blood sugar *(hypoglycaemia)*

**Rapid progression**
- Pale, cold
- Sweating
- Dizzy
- Trembling/shaking
- Hungry
- Weak

### Care and treatment

#### Conscious casualty

- ✔ Give sugar, glucose or a sweet drink, e.g. soft drink *(NOT ‘diet’ or sugar-free drinks)*
- ✔ Continue to give sugar every 15 minutes until casualty improves
- ✔ If no improvement, call **000**
- ✔ On recovery, follow up with a sandwich or other food

#### Unconscious casualty

- ✔ **DRSABCD**
- ✔ Give nothing by mouth

A small amount of sugar given to a casualty will not significantly raise their blood sugar levels and will do no harm.

When in doubt, treat the casualty for a low blood sugar condition

Do NOT administer insulin – could be fatal
POISONING

A poison is any substance which, when introduced into the body, interferes with one or more normal body functions. Poisons may be solid, liquid or gaseous and can be *ingested, inhaled, absorbed* or *injected* into the body. Children are especially vulnerable, both in the likelihood of poisoning occurring and severity of reaction.

**Signs and symptoms**

Look for evidence of the poison being in reach of the casualty. The signs and symptoms depend on the nature of the substance and, in some cases, how it entered the body and may be any of the following:

- Nausea and/or vomiting
- Difficulty breathing
- Blurred vision
- Ringing in ears
- Drowsiness
- Headache
- Skin colour change; blueness around lips
- Burns around/inside mouth or on tongue
- Pain
- Burning pain from mouth – stomach
- Tight feeling in chest
- Smell of fumes
- Unusual odour on breath
- Bite/injection marks with/without swelling
- Contamination of skin
- Sudden collapse

**Care and treatment**

**In all cases**

- ✔ Check for *Danger* – if atmosphere is contaminated with smoke or gas, call *fire brigade*
- ✔ Follow DRSABCD
- ✔ Call *ambulance*

**If casualty is unconscious**

- ✔ Monitor airway and breathing

**If casualty is conscious**

- ✔ Try to determine *What – When – How much*
- ✔ Call *Poisons Information Centre*

- ✺ Send any vomit, containers and/or suicide notes with casualty to hospital
- ✺ Do NOT attempt to induce vomiting unless advised to do so by Poisons Information Centre
- ✺ Do NOT give anything by mouth
- ✺ For ingested poisons, wash/wipe any corrosive substance off mouth

*POISONS INFORMATION CENTRE*

**13 11 26**

*Call from anywhere in Australia – 24 hours a day*
DRUGS and ALCOHOL

A drug is a substance, other than food, which changes the way the body and/or mind functions. Some drugs, such as alcohol, caffeine, nicotine and various prescribed and over-the-counter medications, are legal. Other drugs such as cannabis, amphetamines, ecstasy, cocaine and heroin are illegal.

Use of any drug, even medications, always carries some risk and can produce unwanted side effects which must be attended to by a medical practitioner.

This section describes the most common types of drugs that we see in society. Some of the signs and symptoms, care and treatment are shown in the box below.

We also recommend you check the following sites:
- www.druginfo.adf.org.au
- www.drugs.health.gov.au

**Depressants** (e.g. alcohol, marijuana, GHB, heroin, morphine, codeine, methadone)

Depressants do not necessarily make a person feel depressed. They affect the central nervous system, slowing down messages between the brain and the body, affect concentration and coordination and slow down a person’s ability to respond to unexpected situations.

Overdoses can cause drowsiness, vomiting, unconsciousness and death.

**Stimulants** (e.g. caffeine, nicotine, amphetamines [ice, speed], cocaine, ecstasy)

Stimulants speed up messages between the brain and the body. They can make a person feel more awake, alert, confident or energetic.

Excessive use can cause over-stimulation, causing anxiety, panic, seizures, headaches, stomach cramps, aggression or paranoia.

**Hallucinogens** (e.g. LSD, magic mushrooms [psilocybin])

Hallucinogens distort perception of reality and users may imagine they see/hear things or vision may be distorted. Marijuana and ecstasy can also have hallucinogenic effects.

Persons using illegal drugs can never be sure of the strength or what is actually in the drug. The effects of drugs depend on many factors.

**Signs and symptoms**

- Decreased level of consciousness
- Breathing difficulties
- Abdominal pain
- Drowsiness
- Nausea and/or vomiting
- Pale, cold, clammy skin
- Dilated pupils
- Aggressive, violent, excitable
- Anxiousness, hallucinating
- Syringes, empty bottle/containers
- Smell of drug/alcohol

**Care and treatment**

- Follow DRSABCD with emphasis on DANGER to yourself
- Always call 000 for ambulance if overdose is suspected
- Do NOT make casualty vomit
- Call Poisons Information Centre 13 11 26
- Send drug container to hospital with casualty
CHOKING

An obstruction by a foreign body can cause a partial or a complete airway obstruction. It is life-threatening and unless the airway is promptly cleared, the casualty will die.

**Signs and symptoms**

- Clutching the throat
- Coughing, wheezing, gagging
- Difficulty speaking or swallowing
- Making violent attempts to breathe
- Face, neck, lips, ears, fingernails turning blue
- Making a whistling or ‘crowing’ noise

**Care and treatment**

**Partial airway obstruction**
(Effective cough)

- Encourage to relax and cough
- Reassure
- Call HELP if not cleared rapidly

**Complete airway obstruction**
(Ineffective cough)

- 5 back-blows (check clear mouth after each blow)
- 5 chest thrusts (check clear mouth after each)
- Call HELP if not clear
- If unconscious start CPR

★ Back-blows are delivered using the heel of the hand between shoulder blades
★ Chest thrusts are sharper and slower than chest compressions (casualty must be against a firm surface or support back with other hand)
BURNS and SCALDS

Burns mainly result from exposure to flame, weather, chemicals, electricity, radiation (i.e. sun, heater) hot objects or substances.

Scalds are mainly caused by contact with hot liquids or steam.

Burns are classified as:
1. Superficial (1st degree) – reddening like sunburn
2. Partial thickness (2nd degree) – blistering and very painful
3. Full thickness (3rd degree) – white or blackened often NOT painful

Severity of burns depends on the degree and/or the total burn surface area of the casualty.

Electrical burns are usually more serious than they appear. The depth/internal burn is often the cause of other internal injuries including heart irregularities

Severe burns may result in shock from loss of fluids

Total burn surface area on an adult may be calculated by using the Rule of Nines.

Rule of Nines

<table>
<thead>
<tr>
<th>Body part</th>
<th>Surface area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head (front and back)</td>
<td>9%</td>
</tr>
<tr>
<td>Chest</td>
<td>9%</td>
</tr>
<tr>
<td>Abdomen</td>
<td>9%</td>
</tr>
<tr>
<td>Upper back</td>
<td>9%</td>
</tr>
<tr>
<td>Lower back</td>
<td>9%</td>
</tr>
<tr>
<td>Left arm (inner and outer)</td>
<td>9%</td>
</tr>
<tr>
<td>Right arm (inner and outer)</td>
<td>9%</td>
</tr>
<tr>
<td>Left leg front</td>
<td>9%</td>
</tr>
<tr>
<td>Left leg rear</td>
<td>9%</td>
</tr>
<tr>
<td>Right leg front</td>
<td>9%</td>
</tr>
<tr>
<td>Right leg rear</td>
<td>9%</td>
</tr>
<tr>
<td>Genital</td>
<td>1%</td>
</tr>
</tbody>
</table>

Care and treatment

Minor burns
✓ Cool with water for 20 minutes (running water if possible)

All other burns
DO
✓ Follow DRSABCD
✓ Get medical assistance 000
✓ Cool with water (minimum 20 minutes) (running water if possible)
✓ Cover with loose, non-stick dressing (sheet etc.)
✓ Check for/treat for shock if severe

Do NOT
✘ Apply ice directly to burns
✘ Apply any lotions or powders
✘ Break blisters
✘ Peel off clothing stuck to burns

If burn/scald is equal to/or bigger than palm of the casualty’s hand, seek URGENT medical help
HEAT EXHAUSTION / HEAT STROKE

Heat exhaustion
Heat exhaustion occurs due to high temperatures and humidity and may be exacerbated by strenuous physical activity. Bodily fluids are lost due to profuse sweating (dehydration), raising the body temperature up to 40°C. It is a serious condition that can develop into heat stroke if no remedial action is taken.

Heat stroke
Heat stroke occurs when the body’s core temperature rises above 40.5°C. (Normal body temperature is 37°C) and its internal systems start to shut down. Heat stroke is brought on by high environmental temperatures, by strenuous physical activity, or by other conditions that raise body temperature. Whatever the causes, heat stroke is a life-threatening emergency that requires immediate medical treatment to prevent brain damage, organ failure or death.

The impacts of high temperatures are worse when:

✔ There is high humidity
✔ Night time temperatures remain high and it is difficult to cool dwellings
✔ It remains hot for more than two days in a row

Adequate hydration and keeping cool is the best way to prevent all heat-related illness, including heat stroke

Signs and symptoms

<table>
<thead>
<tr>
<th>Heat exhaustion</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Body temperature 37°C – 40°C</td>
</tr>
<tr>
<td>• Profuse sweating</td>
</tr>
<tr>
<td>• Skin pale, cool and clammy</td>
</tr>
<tr>
<td>• Intense thirst</td>
</tr>
<tr>
<td>• Rapid, shallow breathing</td>
</tr>
<tr>
<td>• Muscle cramps (arms, legs, abdomen)</td>
</tr>
<tr>
<td>• Nausea and vomiting</td>
</tr>
<tr>
<td>• Dizziness or fainting</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Heat stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Body temperature over 40°C</td>
</tr>
<tr>
<td>• No sweating</td>
</tr>
<tr>
<td>• Skin red, hot and dry</td>
</tr>
<tr>
<td>• Dry, swollen tongue</td>
</tr>
<tr>
<td>• Rapid, shallow breathing</td>
</tr>
<tr>
<td>• Throbbing headache</td>
</tr>
<tr>
<td>• Confusion or ‘strange’ behaviour</td>
</tr>
<tr>
<td>• Possible loss of consciousness</td>
</tr>
</tbody>
</table>

Care and treatment

✔ Get medical attention
✔ DRSABCD
✔ Move casualty to cool, shady area and lie him/her down with legs elevated
✔ Cool casualty rapidly, using whatever method you can. (e.g. cool water from garden hose; sponge person with cool water; use ice pack on armpits; wrists, groin area, side of neck; cover with wet sheet)
✔ If casualty is able to drink, give cool non-alcoholic drinks
✔ Do NOT give alcoholic drinks
✔ If unconscious place in the recovery position
HYPOTHERMIA

Hypothermia is the condition of heat when the body core’s temperature is lowered to less than 35°C (normal body temperature is 37°C). This can develop with prolonged exposure to temperatures below 10°C or after prolonged immersion in cold water of less than 20°C. It affects the brain, heart and other internal organs.

**Hypothermia can be mistaken for drowsiness – casualty may not be aware of need for medical attention.** *Act quickly but gently.*

Some of the effects of hypothermia are a reduction of blood flow to the hands, feet and surface of the body, intense shivering in the early stages as the body tries to maintain its core temperature and no shivering in the later stages.

**Heat escape lessening postures** *(for prolonged immersion in cold water)*

### Signs and symptoms

**Mild 35° – 34°C**
- Uncontrollable shivering
- Drowsiness
- Pale, cool skin, blue lips
- Slurred speech
- Fumbling hands
- Memory loss

**33°C**
- Shivering ceases
- Consciousness clouded
- Muscle rigidity increases
- Breathing slow and shallow
- Slowing heart rate

**Severe 32°C or less  Life-threatening**
- *NO* shivering
- Unconscious
- Pupils dilated
- Appears dead
- Cardiac arrest

### Care and treatment

- Get medical attention
- Move casualty out of the cold, remove wet clothing
- Warm casualty at the centre of the body *(chest, neck, head, groin)*
- Do *NOT* use direct heat; use warm blankets, towels, sleeping bag, space blanket or body to body contact and heat packs if available
- Do *NOT* massage or rub the casualty
- Keep the person still
- If casualty is awake, warm drinks can help
- Do *NOT* give alcoholic beverages
- If casualty is not breathing, CPR should be given while he/she is being warmed – *NEVER* assume the person is dead

**NOTE:** Frostbite *(freezing of body tissues):* Treat hypothermia first then rewarm affected area with body heat *(e.g. hands under armpits).* Do *NOT* rub or massage
SPINAL INJURY

The spinal column consists of vertebrae (series of interconnected bones) that enclose the spinal cord (a long, thin, tubular bundle of nervous tissue and support cells that extends from the brain down through the spinal canal).

The spinal cord is part of the nervous system that provides the means by which we breathe, move and use our senses.

Spinal injuries can lead to, or cause:
- Paraplegia (paralysis of the legs and lower body)
- Quadriplegia (paralysis of all limbs)

Common causes for neck and spinal injuries are:
- Car/motorcycle accidents
- Sporting/diving accidents
- Falls or landing heavily on buttocks/feet
- Blows to head/back

Signs and symptoms
- Visible head injuries; blood from ears/nose
- Pain at, or below, site of injury
- Neck or back pain
- Loss of sensation or abnormal sensation e.g. tingling in hands or feet
- Loss of movement or impaired movement below site of injury

Quick check (conscious casualty)
- Can you feel me touch your hands/feet?
- Can you wriggle your fingers/toes?
- Do you have pins and needles anywhere?
- Can you push your toes up towards you?
- Can you point your toes away?

Care and treatment

Unconscious casualty
If as a result of head injury, always suspect/treat as spinal injury
- DRSA-BCD
- Recovery position support to maintain alignment of head, neck, spine
- Maintain clear and open airway

Conscious casualty
- DRSA-BCD
- Calm casualty and loosen clothing
- Do NOT move casualty unless in danger
- Support head and neck

If a casualty is wearing a motorcycle helmet, the helmet should only be removed if absolutely necessary – when you are unable to manage casualty’s airway or if resuscitation is required.

Removal of helmets should be performed by two people:
- With casualty on their side, support head and neck;
- Unfasten chin strap, grasp each strap near the helmet and pull outwards to open the rim of the helmet then gently tilt the helmet back to pass over the chin;
- Gently tilt the helmet forward to pass over the back of the head, continue to tilt the helmet backwards and forwards until it is off the head (take care not to catch helmet on ears or nose).
FRACTURES

Fracture is simply another word for broken bone and is usually the result of a direct/indirect force (e.g. fall, accident) or impact/stress on the bone. Because the treatment is the same, it doesn’t matter to a first aider whether the break is right through the bone or a small crack. What does matter is the type of fracture.

✚ History of an accident (casualty falling or being hit)
✚ Pain at/or near site of the injury
✚ Swelling
✚ Tenderness
✚ Deformity or abnormal mobility
✚ Loss of function
✚ Bone protruding (open fracture)

Open/compound (exposed with open wound – bone may/may not be protruding)
Closed/simple (does not penetrate the skin)
Complicated (combined with damage to artery/vein, nerve or joint)

Signs and symptoms

Care and treatment

✔ Follow DRSABCD
✔ Control any bleeding and cover wounds
✔ Check for fractures
✔️ Open, closed or complicated
✔ Ask casualty to remain as still as possible
✔ Immobilise fracture
✔️ Use broad bandages (where possible) to prevent movement at joints above and below the fracture
✔️ Use triangular bandage for support (see over page)
✔️ Support the limb, carefully passing bandages under the natural hollows of the body
✔️ Place a padded splint along the injured limb
✔️ Place padding between the splint and the natural contours of the body and secure firmly
✔️ For leg fracture, immobilise foot and ankle
✔️ Check that bandages are not too tight/loose every 15 minutes
✔ Watch for signs of loss of circulation to hands/feet
✔ Ensure ambulance has been called

Open and closed fractures are not life-threatening but can be very painful. Unless you are in a ‘remote situation’, ambulance arrival is quick with pain killing medication soon available. So therefore it may pay to wait for ambulance arrival before attempting to splint and bandage any fracture.

If you do immobilise an arm/leg fracture, ask the casualty to move the broken limb as he/she will automatically move the fractured limb with less pain than you will.
BANDAGES

Compression (crepe) bandage
A ‘stretchable’ bandage is used to create localised pressure to reduce flow of blood/lymph. It is used with splints, bleeding, venomous bites, etc.

Gauze bandage
The gauze bandage now has a ‘Telfa’ absorbent barrier to prevent it from adhering to wounds. It can be used for almost any bandage application, including holding a dressing in place.

Triangular bandage
Most versatile of all bandages, the triangular bandage can be used as:
- Collar and cuff sling (fracture of upper arm or injured hand)
- Elevating sling (injured shoulder, collar bone, hand or fingers)
- Full arm sling (injured forearm or wrist)
- Head, hand, foot bandage
- Broad bandage (fold it in half twice to tie on splints and dressing)
- Narrow bandage (broad bandage folded again for collar and cuff sling)
- Padding (around objects etc.)

Collar and cuff sling
1. Start with a clove hitch using a narrow bandage
2. Slip the clove hitch over wrist on injured side
3. Tie off at back with a reef knot (on side of neck)

Full arm sling
1. Ask casualty to hold injured arm parallel across body
2. Place triangular bandage under arm of injured side, with the point towards the elbow and one end over the shoulder of the opposite side
3. Bring lower end over the shoulder of injured side
4. Tie off at back with a reef knot (on side of neck)

Elevation sling
1. Ask casualty to hold injured arm diagonally over chest with fingers pointing towards other shoulder
2. Place triangular bandage over the arm with point at the elbow and one end over the opposite shoulder
3. Tuck lower part of bandage up under the length of injured arm and twist end and point portions of bandage at the elbow
4. Twists near the hand, shoulder should place the arm as in a cocoon
5. Tie off with a reef knot at casualty’s back
SPRAINS, STRAINS and DISLOCATIONS

Injuries to joints and muscles are common and although they are not life-threatening they are painful. Bones, joints and muscles may be injured by being overstretched as a result of twisting, a fall or being struck by something hard. The outcome may be a fracture, dislocation, strain or sprain. (Refer to Fractures, page 29).

A dislocation occurs when one or more bones are displaced at a joint usually as a result of a direct/indirect strong force on the joint that wrenches the bone into an abnormal position.

### Signs and symptoms

<table>
<thead>
<tr>
<th>Sprain</th>
<th>Strain</th>
<th>Dislocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>✚ Intense pain</td>
<td>✚ Sharp, sudden pain in the injury region</td>
<td>✚ Extremely painful</td>
</tr>
<tr>
<td>✚ Restricted mobility</td>
<td>✚ Loss of power</td>
<td>✚ Possible swelling</td>
</tr>
<tr>
<td>✚ Swelling/bruising quickly develops at injury point</td>
<td>✚ Tender muscle</td>
<td>✚ Deformity (abnormal lump/depression)</td>
</tr>
</tbody>
</table>

### Care and treatment

- **Follow DRSABCD**
- **RICE Management** (order in which you perform is not critical)
  - Rest – both the injured part and casualty
  - Ice – cold compress/icepack applied to the injury
  - Compression – compression/crepe bandage
  - Elevation – above casualty’s heart (reduces blood flow pressure to limb and swelling)
- **Seek medical aid**

Do NOT attempt to relocate a dislocated bone because you may cause further damage.

### CRUSH INJURIES

A crush injury occurs when a body part is subjected to a high degree of force or pressure, usually after being squeezed between two heavy objects. The casualty may suffer one or multiple injuries, e.g. fracture, bleeding, bruising, compromised blood circulation, ruptured organs, etc.

The longer a casualty is subjected to the crushing force, the greater the risk of developing ‘Crush Injury Syndrome’, a complication of major crushing injury causing toxins to build up. There may be a risk of sudden death because removal of the crushing force may cause toxins to flow with blood direct to the heart.

Always call for medical support with any crush injury because of possible complications.

### Care and treatment

- **Follow DRSABCD**
- **Reassure casualty**
- **Relieve the crushing force as quickly as possible if it is safe to do so**
- **Treat any other injuries**
- **Assist medical support**
BITES and STINGS (Envenomation)

Venom injected by many creatures will harm the human body in some way. In many cases, choosing the most appropriate first aid technique for a particular bite/sting is important because it may save the person’s life.

In other cases it will help relieve the pain. It is important to identify the creature and, if possible, observe the casualty’s symptoms and signs in case further medical treatment is required.

Fatal creatures

<table>
<thead>
<tr>
<th>Signs and symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Snakes</strong></td>
</tr>
<tr>
<td>✦ Puncture marks</td>
</tr>
<tr>
<td>✦ Headache, nausea, vomiting</td>
</tr>
<tr>
<td>✦ Abdominal pain</td>
</tr>
<tr>
<td>✦ Blurred vision</td>
</tr>
<tr>
<td>✦ Irritability, confusion</td>
</tr>
<tr>
<td>✦ Tender and weak muscles</td>
</tr>
<tr>
<td>✦ Abnormal rapid heart rate</td>
</tr>
<tr>
<td>✦ Respiratory weakness / Respiratory failure</td>
</tr>
</tbody>
</table>

| **Funnel-web spider**                |
| ✦ Sharp pain at bite site            |
| ✦ Nausea, vomiting, abdominal pain   |
| ✦ Excessive sweating                |
| ✦ Copious salivation and tears       |
| ✦ Local swelling                     |
| ✦ Local and generalised spasms      |
| ✦ Disorientation                     |

| **Blue-ringed octopus**             |
| Bite is not painful and might not be noticed, however, within 10 minutes symptoms will begin to develop and may progress rapidly to respiratory failure. |
| ✦ Weakness/numbness of face          |
| ✦ Nausia, vomiting                  |
| ✦ Respiratory failure               |

| **Cone snail (Cone shell)**         |
| A sharp pain is felt and the stung area may become swollen, pale or cyanotic. After the initial pain, symptoms will progress rapidly. Severe envenomation may result in death after respiratory paralysis within hours. |
| ✦ Weakness/numbness                  |
| ✦ Lack of co-ordination              |
| ✦ Disturbed vision, speech and hearing |
| ✦ Respiratory failure                |

Care and treatment

**DRSABCD**

- Reassure and encourage casualty to remain calm and still
- Apply pressure bandage to the envenomated limb (see below). If bite is to the trunk, apply firm pressure to bitten area
- **Splint/sling** the limb to restrict movement (where possible bring help to, rather than moving, the casualty)
- Mark “X” over bite/sting site

Do NOT:

- ✻ attempt to catch the snake
- ✻ wash bite site
- ✻ cut, bite or suck venom
- ✻ restrict chest movement
- ✻ elevate envenomated limb
- ✻ remove bandages/splint

Pressure immobilisation bandage/technique

(Use of pressure/crepe bandage slows the lymph flow and inactivates certain venoms by trapping them in the tissues)

- ✅ If only one bandage, start at the the bite site and extend up to the limb to the armpit/groin.
- ✅ With two bandages, commence the second bandage at the fingertips/toes and extend up the limb to the armpit/groin (over the top of the first bandage)
- ✅ Immobilise the limb with a splint/sling

**There is NO anti-venine for Blue-ringed octopus bites or Cone snail stings. CPR may be required following a bite/sting**
<table>
<thead>
<tr>
<th>Signs and symptoms</th>
<th>Care and treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red-back / other spiders (NOT Funnel web)</strong></td>
<td>✓ DRSABCD</td>
</tr>
<tr>
<td>✤ Mild to sharp bite</td>
<td>✓ COLD COMPRESS / ICE PACK</td>
</tr>
<tr>
<td>✤ Patchy sweating</td>
<td>If sting apparatus remains attached to the skin, remove as soon as possible (finger-nail or technique which avoids squeezing more venom into wound)</td>
</tr>
<tr>
<td>✤ Nausea, vomiting, abdominal pain</td>
<td></td>
</tr>
<tr>
<td>✤ Local redness and swelling</td>
<td></td>
</tr>
<tr>
<td>✤ Headache</td>
<td></td>
</tr>
<tr>
<td>✤ Muscle weakness/spasms</td>
<td></td>
</tr>
<tr>
<td>✤ Restlessness</td>
<td></td>
</tr>
<tr>
<td>Red-backs may create headache, intense local pain which increases and spreads. Other spider bites may develop blistering and/or a burning sensation</td>
<td></td>
</tr>
<tr>
<td><strong>Bees, Wasps, Ants, Scorpions</strong></td>
<td></td>
</tr>
<tr>
<td>✤ Presence of bee’s barb</td>
<td></td>
</tr>
<tr>
<td>✤ Pain, itching, swelling at stung area</td>
<td></td>
</tr>
<tr>
<td>✤ Breathing difficulties if stung in throat</td>
<td></td>
</tr>
<tr>
<td>Fire ants inflict a fiery sting causing a small blister to form at each sting site after several hours</td>
<td></td>
</tr>
<tr>
<td>No Australian species of scorpion are known to be dangerous although all have a venomous sting</td>
<td></td>
</tr>
<tr>
<td><strong>Jellyfish</strong></td>
<td>✓ DRSABCD</td>
</tr>
<tr>
<td>✤ Box jellyfish</td>
<td>✓ Flood with VINEGAR for 30 secs (inactivates stinging)</td>
</tr>
<tr>
<td>✤ Irukandji</td>
<td>✓ Remove tentacles (flick/gloves)</td>
</tr>
<tr>
<td>✤ Severe initial pain</td>
<td>✓ Medical aid</td>
</tr>
<tr>
<td>✤ Pattern of sting marks</td>
<td></td>
</tr>
<tr>
<td>✤ Irrational behaviour</td>
<td></td>
</tr>
<tr>
<td>Antivenine is available for Box jellyfish</td>
<td></td>
</tr>
<tr>
<td><strong>Jellyfish</strong></td>
<td>✓ DRSABCD</td>
</tr>
<tr>
<td>✤ Bluebottle</td>
<td>✓ HOT WATER for pain relief</td>
</tr>
<tr>
<td>✤ Other (e.g. blubber, moon jelly)</td>
<td>✓ Remove tentacles</td>
</tr>
<tr>
<td>✤ Other (e.g. blubber, moon jelly)</td>
<td>✓ Medical aid</td>
</tr>
<tr>
<td><strong>Stingray / Stonefish</strong></td>
<td>✓ DRSABCD</td>
</tr>
<tr>
<td>✤ Severe pain at site of envenomation</td>
<td>✓ HOT WATER for pain relief</td>
</tr>
<tr>
<td>✤ Swelling</td>
<td>✓ Remove tentacles</td>
</tr>
<tr>
<td>✤ Open wound and/or bleeding</td>
<td>✓ Medical aid</td>
</tr>
<tr>
<td>✤ Irrational behaviour</td>
<td>(‘Other’ ✤ ice packs for pain relief)</td>
</tr>
<tr>
<td>✤ Breathing difficulties</td>
<td></td>
</tr>
<tr>
<td>Leave stingray barb for removal at medical facility!</td>
<td></td>
</tr>
<tr>
<td>Pressure immobilisation is NOT recommended, it may increase severity of local pain</td>
<td></td>
</tr>
<tr>
<td>“HOT WATER” for pain relief means as hot as casualty can take without burning or scalding</td>
<td></td>
</tr>
</tbody>
</table>
**DROWNING**

**Drowning** is the process of experiencing respiratory impairment from immersion in liquid.

**Near Drowning** is the survival of a drowning event involving unconsciousness or water inhalation and can lead to serious secondary complications, including death, after the event.

Possible sequence of drowning events:

- Immersion of face in water (or other liquid).
  - Breath-holding, the length of which will vary according to victim’s state of health and fitness, immediate previous exercise, panic and water temperature.
- Vigorous breathing efforts. These may continue, even after loss of consciousness. Water may be drawn into the airway causing laryngeal spasm or vigorous coughing. Water may also enter the lungs.
- Swallowing of air and water, often in large amounts. This usually causes vomiting or regurgitation.
- In most victims, laryngeal spasm relaxes after loss of consciousness and water and vomit may then be drawn into the lungs. In some victims, laryngeal spasm does not relax with loss of consciousness so the lungs remain “dry”.

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**Care and treatment**

- Generally follow DRSABCD, however, a drowning victim is:
  - Rolled into recovery position during initial check and potential clearing of airway
- Check for breathing whilst a victim is in the side position to stop multiple rolling of victim
- Commence CPR if required
- Attach AED and follow prompts
- Place into recovery position if vomiting or regurgitation occurs

---

*All immersion casualties must be assessed in hospital because “Late Drowning Syndrome” complications often follow*
MEDICAL OXYGEN EQUIPMENT

Use of medical oxygen may be beneficial for both breathing and non-breathing casualties. Evidence also supports the use of oxygen as part of first aid treatment of casualty suffering decompression illness (the bends).

Administration of oxygen and use of oxygen delivery devices should only be undertaken by those who are trained in its use.

Basic Life Support (DRSABCD) should never be delayed whilst waiting for oxygen or other equipment.

There are numerous types of oxygen delivery devices available, from a simple resuscitation mask (pocket mask) to the more complex bag and valve mask with or without a reservoir.

Medical Oxygen Cylinder

The Australian Standard (AS2473.3), that determines which valve outlet must be used for medical gas cylinders, requires fitting of a medical oxygen valve outlet on medical oxygen gas cylinders.

The Australian Standard (AS4484), that defines the labelling and colour coding for gas cylinders, requires that medical gas cylinders shall have a white body colour with the colour on the shoulder of the cylinder indicating the type of gas in the cylinder. The cylinders have a pin indexed valve outlet to enhance the safety of end users of medical gases. What this means is enhanced safety of end users of medical gases with the additional safety of a pin indexed outlet valve for medical oxygen.

Marine Rescue mainly uses size ‘C’ (490 litres) cylinders.

Check:

✓ Correct, white metal cylinder
✓ Plastic seal/wrap – denotes full cylinder
  (Lasts 1 hour @ low rate 8 lpm when full)
✓ Heat tag (if distorted don’t use)

‘Cracking’ the Cylinder

To purge dust from the outlet, open and rapidly close the cylinder valve using the cylinder key attached to the regulator prior to fitting the regulator. (Turn anticlockwise to open and clockwise to close.)
MEDICAL OXYGEN EQUIPMENT (cont.)

Fitting the Regulator

- Ensure area is safe and ventilated
- Correct Medical Oxygen cylinder (white)
- Inspect cylinder and remove seal/wrap
- ‘Crack’ cylinder – don’t point outlet at anyone
- Check ‘O’ ring is not damaged and in place
- Check regulator is clean of dust and grease
- Fit regulator – placing it over the cylinder neck ensuring index pins go into index slots
- Secure regulator with ‘T’ piece – don’t over-tighten
- Set flow meter to ‘8’ (8 lpm) and open
- Cylinder using cylinder key
- Set flow meter to ‘0’ (off) and listen for leaks
- Check pressure gauge to confirm full cylinder
- Close cylinder and depressurise by opening flow meter and return it back to ‘0’
- Leave regulator attached – all valves closed unless for immediate use
OXYGEN THERAPY

Oxygen therapy is the administering of oxygen to a breathing casualty (conscious or unconscious) in order to:

- assist with breathing
- increase delivery of oxygen to heart and brain (also refer Decompression Sickness section)
- reduce respiratory rate
- reduce pain

The normal air we breathe contains 21% oxygen.

High concentration (100%) oxygen should be used on casualties as soon as it becomes available, provided that adequate ventilation is maintained. Oxygen should never be withheld because of fear of adverse effects.

Take extra care with delivery of oxygen to a casualty suffering a severe asthma attack because the casualty will have difficulty expelling air. Use a Standard Face Mask.

<table>
<thead>
<tr>
<th>Delivery Device</th>
<th>Oxygen Flow Rate</th>
<th>Oxygen Delivered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resuscitation (Pocket) Mask</td>
<td>Expelled air</td>
<td>16%</td>
</tr>
<tr>
<td>Resuscitation (Pocket) Mask</td>
<td>15 lpm</td>
<td>70%</td>
</tr>
<tr>
<td>Bag-Valve-Mask</td>
<td>Normal Air</td>
<td>21%</td>
</tr>
<tr>
<td>Standard Face Mask or Nasal Prongs</td>
<td>8 lpm</td>
<td>50%</td>
</tr>
<tr>
<td>Bag-Valve-Mask WITHOUT Reservoir</td>
<td>15 lpm</td>
<td>45%</td>
</tr>
<tr>
<td>Bag-Valve-Mask WITH Reservoir</td>
<td>15 lpm</td>
<td>100%</td>
</tr>
</tbody>
</table>

May come with or without a nipple to attach an oxygen tube. (A nipple will come with a cap.)

If medical oxygen is used in conjunction with a mask without a nipple simply place the oxygen tube between the mask and casualty. (Mask has soft cushion.)
OXYGEN RESUSCITATION

The main aim of administering oxygen resuscitation is the ‘delivery of oxygen to heart and brain’. This can be achieved with the use of various devices and may depend on availability.

Basic Life Support (DRSABCD) should never be delayed whilst waiting for oxygen or other equipment.

The following provides some insight of the amount of oxygen that is delivered with various devices, aiming to provide the casualty as much oxygen as possible.

Expelled Air (16% Oxygen)

Mouth to mask resuscitation is a method of rescue breathing which avoids mouth to mouth contact by the use of a resuscitation mask (pocket mask).

Normal Air (21% Oxygen)

Bag-Valve-Mask without Reservoir resuscitation

Medical Oxygen (100% Oxygen)

Bag-Valve-Mask with Reservoir (flow rate 15 lpm)

Rescue breaths for resuscitation are applied by squeezing the bag. Inflate until chest rises but don’t over inflate. Two operators may be required (preferred) to operate a Bag-Valve-Mask because one operator will experience difficulty.

Bag-Valve-Mask with Reservoir

Two operators delivering 100% oxygen using Bag-Valve-Mask with Reservoir
RESUSCITATION OF DIVERS WHO HAVE USED COMPRESSED GAS

Most commonly, divers use SCUBA (Self-contained Underwater Breathing Apparatus) and breathe from cylinders containing ‘compressed gas’ (usually air) carried underwater, but the breathing gas can also be supplied from the surface (hookah supply). Whichever method is used to supply the gas, breathing compressed gas underwater can lead to several unique medical problems, the most significant being decompression illness (DCI) and pulmonary barotrauma (rupture of small airways). In addition, divers may suffer from the same aquatic mishaps as swimmers, snorkelers and boating enthusiasts. Decompression illness and pulmonary barotrauma require special first aid considerations, including the prompt and continued administration of near-100% oxygen. Diagnosis of the exact problem in an ill or injured diver can often be unnecessary for effective first aid; it is however, important to also consider non-diving-related causes of the presenting condition.

Decompression Sickness (DCS)

During an air dive, nitrogen from the inhaled gas is dissolved in the diver’s blood. Unless the diver ascends slowly enough to allow the excess nitrogen to leave the body in a controlled manner, nitrogen bubbles may form in the diver’s blood and body tissues. These bubbles, and the biochemical changes associated with them, can reduce the blood supply to various organs causing hypoxia and subsequent damage. This is known as Decompression Sickness (DCS). Some deep divers breathe mixtures of gas containing helium, and may face the same problems due to helium bubbles.

Pulmonary Barotrauma

As a diver ascends, the gas in the lungs expands and, unless expanding gas is adequately exhaled, the diver’s lungs can distend and tear. This can result in a collapsed lung (pneumothorax) and/or trapping of gas in the mediastinum (mediastinal emphysema), or under the skin (subcutaneous emphysema). Escaped gas may also enter the cerebral arterial circulation (cerebral arterial gas embolism or CAGE) causing symptoms ranging from confusion and irritability similar to that of a stroke.

Decompression Illness (DCI)

The term decompression illness is commonly used to collectively describe both DCS and CAGE. Whether a diver has suffered DCS or has a CAGE may be very difficult to tell, particularly in the context of an emergency situation. The treatment strategy is the same for both conditions. It is, however, critical to rapidly identify and treat any large pneumothorax (collapsed lung) that may potentially impede breathing.

### Signs and Symptoms

<table>
<thead>
<tr>
<th>DECOMPRESSION ILLNESS</th>
<th>PULMONARY BAROTRAUMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Extreme fatigue</td>
<td>+ Chest pain</td>
</tr>
<tr>
<td>+ Numbness/tingling or altered sensation</td>
<td>+ Difficulty breathing</td>
</tr>
<tr>
<td>+ Headache or other body pain, especially at or around joints</td>
<td>+ Coughing</td>
</tr>
<tr>
<td>+ Poor balance or coordination</td>
<td>+ Blueness of lips and tongue (cyanosis)</td>
</tr>
<tr>
<td>+ Irritability, confusion or reduced consciousness</td>
<td>+ Voice changes</td>
</tr>
<tr>
<td>+ Weakness, paralysis, physical collapse</td>
<td>+ Difficulty swallowing</td>
</tr>
<tr>
<td>+ Rash</td>
<td>+ ‘Crackly’ skin around neck (crepitus)</td>
</tr>
<tr>
<td>+ Speech, visual or hearing disturbance</td>
<td>+ Reduced responsiveness</td>
</tr>
</tbody>
</table>

+ Signs/symptoms of decompression illness may also be present
Resuscitation of Divers Who Have Used Compressed Gas (cont.)

Care and Treatment

✓ If the victim is unconscious, DRSABCD (A victim of DCI may regain consciousness and appear to have recovered but still needs to be managed for suspected DCI due to the possibility of relapse)

✓ Promptly provide as close to 100% oxygen as possible and continue to do so until the ambulance arrives and takes over management

✓ If DCI is suspected, lay the victim flat if possible

✓ Seek immediate diving medical advice by calling the DAN Diving Emergency Service hotline on 1800 088 200

Assist with any transfer to a recompression chamber if requested to do so.

An alert and stable victim thought to be suffering from DCI may drink non-alcoholic fluids, such as water, isotonic/electrolyte fluids as long as they have no stomach cramps, nausea, urinary retention or paralysis.

鞍山 The Divers Alert Network (DAN) Diving Emergency Services (DES) is a 24-hour emergency hotline available to all diving-related injuries. The hotline provides advice and management on diving-related illness and injury.

鞍山 A flat (horizontal) posture without leg elevation is recommended in injured divers suspected of DCI as it has been shown to increase the rate of inert gas elimination. It may also reduce the likelihood of arterial bubbles migrating to the brain (Expert Consensus). However, if a conscious diver is having increased difficulty breathing when supine, they can be placed in a position of comfort.

Administering 100% oxygen reduces the size and number of gas bubbles in the bloodstream and tissues by helping to eliminate the inert gas in the bubbles and blood.

Delivering 100% oxygen to casualty using a Bag-Valve-Mask with Reservoir
**OROPHARYNGEAL AIRWAYS**

**Artificial airways**

**Oropharyngeal airways (Guedel airways)**

A Guedel airway is the preferred airway adjunct when performing bag-mask ventilation in cardiac arrest. The head tilt and jaw support still needs to be applied.

**Inserting**

Slide in with end pointing to roof of the mouth then place it into position by rotating the airway 180° when it reaches the back of the throat.

**Removal**

Simply pull airway out without rotation following the curvature of the tongue.

**Sizing**

Guedel airways come in various sizes. The apparent colour coding is not always useful because a Guedel airway needs to be appropriately sized for every casualty.

To measure for the correct size of an airway, take the distance between the corner of the mouth and the lobe of the ear on the same side.

*(Refer diagram below)*

---

*Figure: Sizing Guedel airway*
SUCTION

Suction equipment/units may be powered by electrical, battery or manual means. This chapter will deal with manually-operated suction units because of their use by Marine Rescue NSW. Various brands are available and the writer has chosen ‘Laerdal’ to demonstrate the procedure.

Suction units are infrequently used with first aid but trained operators may use suction to, assist to maintain a clear airway by removal of vomit, blood or mucus during resuscitation.

Suction does not divert the need to follow DRSABCD and place a breathing unconscious casualty in the recovery position.

Manual Suction Unit

There are a variety of manual suction units in use but all share the same suction application. The writer is using the “Laerdal” manual suction unit to demonstrate various components available, such as:

+ Adjustment for high- and low-pressure suctioning
+ No-clog suction tip (intake valve)
+ Versatile catheter connection
+ Disposable one-piece cartridge
+ Reusable handle

Suction Application

✔ Turn casualty on side if possible
✔ Open – Check – Clear airway
✔ Measure correct length to allow insertion of ‘Suction catheter’ into mouth (Distance from corner of the mouth to the lobe of the ear on the same side)
✔ Insert catheter (Do not exceed correct length)
✔ Use hand-pump suction to remove vomit, blood or mucus
✔ Replace cartridge when needed
✔ Seal and retain used cartridge(s) for hospital
MARITIME FIRST AID CONSIDERATIONS

NATIONAL STANDARD FOR COMMERCIAL VESSELS (NSCV)

Requirements for Medical Supplies
The requirements for medical supplies and equipment for Marine Rescue NSW vessels, is listed in Part C, Section 7, Subsection 7A of the National Standard for Commercial Vessels.

All our rescue vessels are Class 2.

Refer to pages 44-45 for the list of items stored in our first aid kits.

The objective is to specify the medical supplies necessary to treat minor medical conditions or injuries, or to temporarily stabilise a patient until transfer to medical assistance can be arranged.

Labelling and Packaging
✚ Medication should be in original sealed blister or foil packs where possible.
✚ All medicines have an expiry date. Expired or surplus medications should be returned to a pharmacist for disposal.
✚ All products carry instructions and directions for use in English and clearly state the adult dose where applicable to enable safe and effective use of the medication for the intended purpose(s).
✚ All medicines and, where necessary, first aid stocks carry cautionary and advisory labelling, to alert as to issues of sedation or interaction with food or alcohol, etc.

Medical Log Book
All vessels carry and record the use of all medicines, first aid and medical incidents in a Medical Log Book (to include the time, patient, condition and treatment) and record the stock movements for Controlled Drugs in a Controlled Drugs Register. This includes the supply, use, disposal, loss or theft of such controlled drugs.

Additional considerations at sea
✚ Time to medical treatment?
✚ Sea conditions – is casualty stable?
✚ Stabilise/prepare casualty for:
✦ transfer to another vessel
✦ helicopter retrieval
✦ shore ambulance transfer

FIRST AID KIT
All commercial vessels must carry at least one portable first aid kit. Marine Rescue NSW adopted ‘scale F First Aid Kit’ for all their vessels. [Complies with the National Standard for Commercial Vessels (NSCV) guidelines] (refer pages 44-45)
✚ Located in the wheelhouse. In small, partly open vessels, the first aid kit shall be stowed so as to protect it from incoming spray and the weather.
✚ Stored in a weathertight, portable case of a non-corrosive material of suitable strength and size to accommodate the first aid stores.
✚ Fastened securely with quick-release closures.
✚ Labelled FIRST AID on the lid and at least two (2) sides for quick identification. The storage location of the first aid kit shall be clearly identified with an appropriate sign or sticker.
✚ Contents shall be listed with a brief instruction for use for each item listed along with expiry dates and the last check date. The list shall be stowed within or adjacent to the first aid kit.
✚ Kits must be cleaned and checked every three (3) months

No medication is to be given to casualties without medical consent and if unsure of the nature or seriousness of an illness or injury, radio medical advice should be sought if necessary. Medical evacuation by helicopter should be initiated.

To avoid waste, products such as analgesics and creams shall be considered adequate if an opened package contains at least 50% of the original quantity and the remaining product is uncontaminated and unaffected by any expiry date as a result of any seal being broken.
CERVICAL COLLAR

STEPS TO FIT COLLAR (Two Trained Operators)

1. Measure the casualty

Align the head to neutral (eyes forward) position then measure “Shoulder to Chin”

2. Match the collar size to the casualty

Select from:
Adult (4 positions); Paediatric (3 positions)

3. Adjust and lock the adjustable collar
(Same method for adjusting both Collars)

Adjust the chin support to the size selected in Step 2

4. Preform the collar

5. Apply the collar while manually maintaining neutral head position

Place the chin support under the chin (if different size is needed: remove – resize – reapply)

Pull the back of the collar snug while holding the front in place and then fasten

For a supine casualty slide the rear panel behind the neck before placing the chin support

Lock both sides by pressing the two lock tabs

Store collar in flat position
### AMSA GUIDANCE NOTICE—SCALE F FIRST AID KIT

**Items to be stored in first aid kit**

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Notes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandage, conforming 5cm</td>
<td>2</td>
<td></td>
<td>Secure dressing and support injured parts</td>
</tr>
<tr>
<td>Bandage, conforming 10cm</td>
<td>2</td>
<td></td>
<td>Secure dressing and support injured parts</td>
</tr>
<tr>
<td>Bandage, heavy crepe 7.5cm</td>
<td>2</td>
<td></td>
<td>Support bandage</td>
</tr>
<tr>
<td>Bandage, heavy crepe 10cm</td>
<td>1</td>
<td></td>
<td>Support bandage, wide</td>
</tr>
<tr>
<td>Bandage, triangular</td>
<td>4</td>
<td></td>
<td>Sling</td>
</tr>
<tr>
<td>Dressing, combine 10 x 10cm, sterile</td>
<td>3</td>
<td>†</td>
<td>Bleeding control</td>
</tr>
<tr>
<td>Dressing, combine 10 x 20cm, sterile</td>
<td>5</td>
<td>†</td>
<td>Bleeding control, large</td>
</tr>
<tr>
<td>Dressing, non-adherent (10 x 10cm or similar)</td>
<td>10</td>
<td>†</td>
<td>Wound cover</td>
</tr>
<tr>
<td>Dressing, hydroactive (10 x 10cm or similar)</td>
<td>2</td>
<td>†</td>
<td>“Blisters, burns and minor exudate wounds”</td>
</tr>
<tr>
<td>Wound dressing, combination, large</td>
<td>3</td>
<td></td>
<td>Major wounds</td>
</tr>
<tr>
<td>Wound dressing, combination, small</td>
<td>2</td>
<td></td>
<td>Major wounds</td>
</tr>
<tr>
<td>Adhesive roll non-woven fabric 5cm x 10m</td>
<td>1</td>
<td></td>
<td>Securing dressings</td>
</tr>
<tr>
<td>Dressings, elastic fabric strips</td>
<td>50</td>
<td></td>
<td>Minor wound cover</td>
</tr>
<tr>
<td>Gauze swabs, sterile (single use pkt of 3)</td>
<td>9</td>
<td>†</td>
<td>Cleansing / dressing wound</td>
</tr>
<tr>
<td>Eye pad, sterile</td>
<td>4</td>
<td>†</td>
<td>Eye cover</td>
</tr>
<tr>
<td>Wound closure strips, wide, 6 x 38mm</td>
<td>3</td>
<td>†</td>
<td>Securing wound sides</td>
</tr>
<tr>
<td>Tape surgical waterproof 2.5cm x 5m</td>
<td>1</td>
<td></td>
<td>Secure dressing</td>
</tr>
<tr>
<td>Tape surgical waterproof 5cm x 5m</td>
<td>1</td>
<td></td>
<td>Secure dressing</td>
</tr>
<tr>
<td>Towels, disposable, pkt of 2</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic bag set (3 asst L, M and S)</td>
<td>2</td>
<td></td>
<td>Amputated parts</td>
</tr>
<tr>
<td>Plastic bag</td>
<td>2</td>
<td></td>
<td>Disposal of soiled dressings</td>
</tr>
<tr>
<td>Gloves, disposable, large</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety pins, stainless, assorted pkt of 12</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blanket, emergency thermal</td>
<td>1</td>
<td></td>
<td>Hypothermia and shock</td>
</tr>
<tr>
<td>Ice pack, instant</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resuscitation mask, disposable</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resuscitation mask, pocket</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Splinter probes, sterile, disposable</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shears, Stainless, 19cm minimum</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Splinter forceps, 12.5cm</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalpel, disposable</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Splint malleable, universal</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: † Expiry dated

Continued over page
Items to be stored in first aid kit (cont.)

<table>
<thead>
<tr>
<th>Description</th>
<th>Qty</th>
<th>Notes</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal saline, sterile 30 ml polyamp</td>
<td>10</td>
<td>†</td>
<td>Eye irritation / wound cleaning</td>
</tr>
<tr>
<td><strong>Sodium Chloride 0.9% (Normal Saline) ampoule 10 ml</strong></td>
<td>20</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Sterile injection and irrigation 50 ml</strong></td>
<td>3</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Sodium Chloride compound eye rinse 120 ml</strong></td>
<td>2</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Povidone iodine swabs (single use)</td>
<td>20</td>
<td>†</td>
<td>Antiseptic</td>
</tr>
<tr>
<td><strong>Povidone-Iodine 10% antiseptic liquid 100 ml</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Anaesthetic + antiseptic cream 30 g</td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Cetrimide/Lignocaine compound cream 100 g</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Benzalkonium Chloride/Lignocaine sunburn relief spray 125 ml</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Hydrocortisone 1% cream 30 g</td>
<td>1</td>
<td>†</td>
<td>Rashes and bites</td>
</tr>
<tr>
<td><strong>Hydrocortisone 0.5% Cream 30 g</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Betamethasone Valerate 0.02% Cream 100g</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Paracetamol 500 mg tabs or caps</td>
<td>2 x 24</td>
<td>†</td>
<td>Mild pain relief</td>
</tr>
<tr>
<td>Paracetamol 500 mg / Codeine 8mg</td>
<td>24</td>
<td>†</td>
<td>Moderate pain relief</td>
</tr>
<tr>
<td><strong>Paracetamol 500mg/Codeine Phosphate 15 mg tablets</strong></td>
<td>40</td>
<td>†</td>
<td>Do NOT exceed EIGHT tablets in ONE day</td>
</tr>
<tr>
<td>Ibuprofen 200 mg tablets</td>
<td>24</td>
<td>†</td>
<td>Anti-inflammatory</td>
</tr>
<tr>
<td>Ibuprofen 400 mg tablets</td>
<td>30</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Naproxen 250 mg tablets</td>
<td>50</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Hyoscine hydrobromide 0.3 mg tablets</td>
<td>10</td>
<td>†</td>
<td>Seasickness</td>
</tr>
<tr>
<td><strong>Hyoscine Hydrobromide 0.2 mg, Dimenhydrinate 50 mg</strong></td>
<td>10</td>
<td>†</td>
<td>Potentially more sedating. Alcohol must be avoided</td>
</tr>
<tr>
<td>Caffeine 20 mg tablets</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loperimide 2 mg tablets</td>
<td>16</td>
<td>†</td>
<td>Diarrhoea</td>
</tr>
<tr>
<td><strong>Loperamide 2 mg capsules</strong></td>
<td>24</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Diphenoxylate HCl 2.5 mg/Atropine Sulfate 25 mcg tablets</strong></td>
<td>20</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Loratadine HCl 10 mg or Fexofenadine HCl 120 mg tablets</td>
<td>10</td>
<td>†</td>
<td>Antihistamine (non-sedating)</td>
</tr>
<tr>
<td><strong>Cetirizine 10 mg Tablets</strong></td>
<td>10</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>Antacid tablets</td>
<td>50</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td><strong>Antacid liquid 500 ml</strong></td>
<td>1</td>
<td>†</td>
<td></td>
</tr>
<tr>
<td>List of contents, brief instructions for use, expiry dates, and last check dates</td>
<td>1</td>
<td></td>
<td>Stowed within or adjacent to the kit</td>
</tr>
</tbody>
</table>

Notes: * Requires prescription  
† Expiry dated  

*Items shown in italics are considered an equivalent substitution when the medication required by the standard is unavailable*
Post incident evaluation is critical and is an ongoing process. (Follow flow chart below)

**NOTIFY**
- Unit Commander
- Regional Controller

**EQUIPMENT**
- Check, clean and maintain equipment for future use

**DOCUMENT**
- Ensure all documentation is complete
- Retain a copy of assistance report

**IMPACT**
- Recognise physical and psychological effect on self and others involved

**DEBRIEF**
- Participate
- Address all individual needs
REFERENCES

Allergy & Anaphylaxis Australia
www.allergyfacts.org.au

Allergy Net Australia
www.allergynet.com.au/anaphylaxis-resources

Australian Maritime Safety Authority (AMSA)

Australian Drug Foundation
www.druginfo.adf.org.au

Australian Resuscitation Council (ARC)
www[resus.org.au

Australian Venom Research Unit (AVRU)
www.avru.org/firstaid/firstaid_main.html

Epilepsy Australia
www.epilepsyaustralia.net/Seizure_First_Aid/Seizure_First_Aid.aspx

National Asthma Council Australia
www.nationalasthma.org.au/emergency

National Heart Foundation of Australia
www.heartfoundation.org.au/your-heart/cardiovascular-conditions/Pages/default.aspx

National Training Register
http://www.training.gov.au

National Stroke Foundation Australia

NSW Department of Health

NSW Roads and Maritime Services

St John Ambulance Australia
Basic Life Support

Dangers?

Responsive?

Send for help

Open Airway

Normal Breathing?

Start CPR
30 compressions : 2 breaths
if unwilling / unable to perform rescue breaths continue chest compressions

Attach Defibrillator (AED)
as soon as available and follow its prompts

Continue CPR until responsiveness or normal breathing return

December 2010
NOTES
Casualty
M / F  Name and Address: .................................................................
Age/DOB: ........................................ Contact (name and phone): .................................................................
Existing Health Issues and Medications (tick box and write details)
☐ Epilepsy  ☐ Asthma  ☐ Other .................................................................
☐ Heart  ☐ Diabetes .................................................................

Details of Injury / Illness
When – Date: ........................................ and  Time: ........................................ am/pm
Where (location): .................................................................
What happened: .................................................................
Witness (if appropriate): .................................................................

Observations
Breathing
• NOT normal
• laboured
• rapid/slow
Consciousness
• fully
• drowsy
• unconscious
Pupils
• dilated
• constricted
• uneven
Skin
• pale / flushed
• dry / sweaty
• hot / cold
Other

Assessment (show)
Abrasion
Bleeding
Bruising
Burns
Deformity
Fracture
Laceration
Pain
Swelling
Tenderness

Assessment (Preserve Life – Prevent deterioration – Promote recovery)
Where (location): .................................................................

Care and Treatment provided (DRSABCD)
.................................................................

Hand Over / Referral (details):
☐ Ambulance  ☐ Doctor  ☐ Hospital  ☐ Other

First Aider
Name and contact details: .................................................................
Signature: ................................................................. Date: ........................................ and  Time: ........................................ am/pm